FINANCIAL TIMES

WEDNESDAY 14 DECEMBER 2022 | INTERNATIONAL NEWSPAPER OF THE YEAR | EUROPE

Why I'm optimistic about the world's future
MARTIN WOLF, PAGE 17

Europe plays catch-up in global chip race
BIG READ, PAGE 15

Bankman-Fried charged with fraud and conspiracy over FTX collapse

- US regulators indict crypto founder
- 8 criminal counts filed
- Customer funds used as 'piggy bank'

STEFANIA PALMA — WASHINGTON
JOSHUA OLIVER AND
KADHIM SHUBBER — LONDON

US federal prosecutors have accused Sam Bankman-Fried of criminal conspiracy and fraud at the cryptocurrency exchange FTX, part of a wave of charges following his arrest in the Bahamas.

In an indictment unsealed yesterday, the US Department of Justice charged FTX's founder with eight counts including conspiracy to commit wire fraud against customers and lenders, money laundering and violations of campaign finance laws. Bankman-Fried faces years in prison if convicted.

The charges point to a long-running scheme to misappropriate the deposits of exchange customers to pay the debts and expenses of Bankman-Fried's private trading firm Alameda Research and to make investments. The conspiracy ran from 2019, the year he founded FTX, until its collapse last month, according to the indictment.

The failure of his Bahamas-based exchange, once valued at $32bn, has resulted in billions of dollars of potential losses for millions of creditors, including retail investors, and sent shockwaves through the crypto industry.

The criminal case was revealed as lawmakers in Washington conducted a hearing into the FTX bankruptcy. Bankman-Fried had been scheduled to testify until Bahamian police arrested him at his luxury penthouse on Monday.

John Ray, FTX's court-appointed chief executive, told a US House committee: "This isn't sophisticated whatsoever, this is just plain old embezzlement."

Bankman-Fried's lawyer said he was "reviewing the charges with his legal team and considering all of his legal options". FTX declined to comment.

The Securities and Exchange Commission said he had orchestrated a fraud that began the day FTX was launched and continued at his personal direction until November. Customer assets were diverted to make "undisclosed venture investments, lavish real estate purchases and large political donations".

The regulator said Bankman-Fried had taken active steps this year to hide billions of dollars of FTX customer balances held at Alameda, which he had used as "his personal piggy bank".

Gary Gensler, SEC's chair, added: "We allege that Sam Bankman-Fried built a house of cards on a foundation of deception while telling investors that it was one of the safest buildings in crypto."

The regulator has accused him of defrauding venture capitalists and other equity investors who pumped $1.8bn into FTX after May 2019. Before its failure, FTX had won the backing of several of the world's best-known investors including BlackRock, Sequoia Capital and the Ontario Teachers' Pension Plan.

The Commodity Futures Trading Commission charged Bankman-Fried, FTX and Alameda with fraud and material misrepresentations. Computer code written by FTX provided an "effectively limitless line of credit that allowed Alameda to withdraw billions of dollars in customer assets from FTX", it said.

Bankman-Fried has insisted he was unaware of the details of what Alameda was doing. He has also denied wrongdoing and apologised for what he characterised as oversights and errors.

Ray told US lawmakers it would take months to track down assets and, "at the end of the day, we are not going to be able to recover all the losses here".

The SEC alleged that Bankman-Fried had full control and access to information at both FTX and Alameda, and that he "directed investment and operational decisions" at the trading firm.

"The alleged fraud committed by Bankman-Fried is a clarion call to crypto platforms that they need to come into compliance with our laws," Gensler said.

Sam Bankman-Fried insists he was unaware of the details of what Alameda was doing and has apologised for what he sees as errors and oversights
Saul Loeb/AFP via Getty Images

Lex. Bankman-Fried claims he was merely guilty of sloppy record-keeping. The SEC paints a picture not of a mad scientist but of a calculating fraudster

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Briefing

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US consumer price inflation fell more than expected last month to its lowest in almost a year, lifting shares and raising hopes of slower interest rate rises.— PAGE 2

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▸ EU to put duty on carbon
The EU is to introduce the world's first carbon border tax, forcing importers to buy emissions permits, despite concerns it could stir trade disputes.— PAGE 2

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▸ Checkout.com value cut
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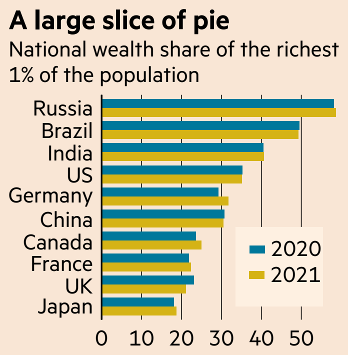
Datawatch



Source: Credit Suisse Global Wealth Report

The wealth share of the global top 1 per cent rose to 45.6 per cent in 2021, up from 43.9 per cent in 2019. The UK was one of the most notable exceptions. The rise in inequality is probably due to the surging values of financial assets in the pandemic.

Fusion breakthrough fires hopes for clean energy

Closer to the dream ▸ PAGE 4

Qatar wooed EU lawmakers with free trips and tickets ahead of World Cup

SILVIA SCIORILLI BORRELLI — MILAN
JAVIER ESPINOZA — STRASBOURG
ANDY BOUNDS AND
VALENTINA POP — BRUSSELS

Qatar offered European lawmakers World Cup tickets, free trips to the Gulf state and other valuable hospitality as it sought to persuade them to soften their criticism of its treatment of workers ahead of the Fifa World Cup.

The European parliament is at the centre of a corruption scandal after Belgian police seized at least €1mn in cash and detained a current and former Socialist MEP as part of a probe into claims that Qatar tried to buy influence.

Former Italian Socialist MEP Pierantonio Panzeri has been charged with corruption, after Belgian police seized €600,000 in cash at his home. Among the accusations is that he took his family on a €100,000 trip paid for by Qatar.

One of the parliament's vice-presidents, Greek Socialist MEP Eva Kaili, and her partner who worked for Panzeri, have also been arrested after Belgian police seized €150,000 from their home.

Qatar's treatment of migrant workers who built the World Cup stadiums has long attracted international criticism.

In the run-up to the World Cup, Qatari officials in Brussels sought to improve the narrative on the country's labour and human rights record, according to five MEPs from three political groups who spoke on condition of anonymity. The MEPs described invitations to dinner, trips and World Cup tickets.

"It was a systemic way of approaching Brussels lawmakers with a view to improving the country's reputation and making sure we would not take a hard stance against the country," said one of the five.

Hannah Neumann, a Green MEP who chairs the Delegation for Relations with the Arabian Peninsula, said she declined free trips to Qatar. "Some embassies try to influence our decisions much more aggressively than others," she said. "It was quite obvious that a few colleagues from the S&D [Socialist] group had a strong pro-Qatari agenda."

Neumann is one of the few EU lawmakers who declared gifts from Arab countries, including a perfume bottle from Qatar. MEPs must not accept gifts worth more than €150 and have to declare any gifts, as well as attendance at events organised by third parties. But enforcement is patchy: with 705 MEPs, the parliament's gifts registry has just 39 entries from eight MEPs since 2020.

The Qatari embassy in Brussels did not respond to a request to comment.

Morocco's World Cup pride page 4

Austria	€4.30	Morocco	Dh50
Bahrain	Din1.8	Netherlands	€4.30
Belgium	€4.30	Norway	NKr45
Croatia	Kn32/€4.25	Oman	OR1.60
Cyprus	€4.00	Pakistan	Rupee350
Czech Rep	Kc120	Poland	Zl 24
Denmark	DKr43	Portugal	€4.00
Egypt	E£80	Russia	€5.00
France	€4.30	Serbia	NewD530
Germany	€4.30	Slovenia	€4.00
Greece	€4.00	Spain	€4.00
Hungary	Ft1350	Switzerland	SFr6.50
India	Rup220	Tunisia	Din7.50
Italy	€4.00	Turkey	TL50
Luxembourg	€4.30	UAE	Dh23
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No: 41,197 ★

Printed in London, Liverpool, Glasgow, Dublin, Frankfurt, Milan, Madrid, New York, Chicago, San Francisco, Tokyo, Hong Kong, Singapore, Seoul, Dubai

World Markets

STOCK MARKETS

	Dec 13	Prev	%chg
S&P 500	4027.50	3990.56	0.93
Nasdaq Composite	11289.87	11143.74	1.31
Dow Jones Ind	34123.81	34005.04	0.35
FTSEurofirst 300	1746.44	1726.38	1.16
Euro Stoxx 50	3981.69	3921.82	1.53
FTSE 100	7502.89	7445.97	0.76
FTSE All-Share	4105.09	4070.00	0.86
CAC 40	6744.98	6650.55	1.42
Xetra Dax	14440.03	14306.63	0.93
Nikkei	27954.85	27842.33	0.40
Hang Seng	19596.20	19463.63	0.68
MSCI World $	2683.56	2662.86	0.78
MSCI EM $	963.58	978.28	-1.50
MSCI ACWI $	622.59	619.36	0.52
FT Wilshire 2500	5175.94	5101.77	1.45
FT Wilshire 5000	40407.15	39830.92	1.45

CURRENCIES

Pair	Dec 13	Prev	Pair	Dec 13	Prev
$/€	1.064	1.052	€/$	0.940	0.950
$/£	1.240	1.225	£/$	0.807	0.816
£/€	0.858	0.859	€/£	1.165	1.165
¥/$	135.165	137.415	¥/€	143.796	144.582
¥/£	167.557	168.374	£ index	79.827	79.964
SFr/€	0.986	0.985	SFr/£	1.148	1.147

CRYPTO

	Dec 13	Prev	%chg
Bitcoin ($)	17791.33	17211.55	3.37
Ethereum	1325.34	1275.64	3.90

COMMODITIES

	Dec 13	Prev	%chg
Oil WTI $	75.99	73.17	3.85
Oil Brent $	81.04	77.99	3.91
Gold $	1786.60	1796.15	-0.53

GOVERNMENT BONDS

Yield (%)	Dec 13	Prev	Chg
US 2 yr	4.20	4.36	-0.16
US 10 yr	3.48	3.58	-0.10
US 30 yr	3.50	3.56	-0.06
UK 2 yr	3.56	3.48	0.09
UK 10 yr	3.29	3.19	0.10
UK 30 yr	3.71	3.61	0.11
JPN 2 yr	-0.02	-0.01	-0.01
JPN 10 yr	0.25	0.25	0.00
JPN 30 yr	1.40	1.43	-0.03
GER 2 yr	2.14	2.20	-0.06
GER 10 yr	1.92	1.94	-0.02
GER 30 yr	1.74	1.71	0.03

Prices are latest for edition
Data provided by Morningstar

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VISIT…

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INTERNATIONAL

Cost of living

US inflation slowdown boosts Fed plans

Rate of consumer price rises dips to its lowest level in almost a year

COLBY SMITH — WASHINGTON

US stocks and government bonds surged after consumer price inflation fell more than expected in November to its lowest level in almost a year, bolstering the Federal Reserve's plans to slow the pace of interest rate rises.

The rate of increase in the consumer price index fell to 7.1 per cent last month, lower than the 7.3 per cent forecast by economists and down from 7.7 per cent in October. It was the lowest level since December 2021.

Overall CPI rose 0.1 per cent from the previous month, less than the 0.4 per cent increase in October.

US president Joe Biden cheered the slower increase in a statement from the White House: "In a world where inflation is rising at double digits in many major economies around the world, inflation is coming down in America," he said. "Make no mistake: prices are still too high. We have a lot more work to do, but things are getting better."

Biden said he hoped prices would be "much closer" to "normal" by the end of next year. "We could see setbacks along the way. But what is clear is my economic plan is working and we're just getting started. My goal is simple: get price increases under control without choking off economic growth."

By late-morning trading, the S&P 500 was up 1.5 per cent and the Nasdaq Composite more than 2 per cent, as investors bet that the US central bank might not have to squeeze the economy as aggressively as feared to bring inflation under control. The yield on two-year US Treasury bonds, which is sensitive to changes in interest rate expectations, slid 0.22 percentage points to 4.18 per cent at one point, as the price increased. It later rose to 4.2 per cent.

'Make no mistake: prices are still too high. We have a lot more work to do, but things are getting better'

The dollar shed 1 per cent against a basket of six peers. It has drifted lower in recent weeks, but an index tracking the US currency is 8 per cent higher for 2022 — buoyed by the Fed's rate raising.

The inflation report, released by the Bureau of Labor Statistics, came at the start of the Federal Open Market Committee's final two-day policy meeting of the year. The Fed is set to raise its benchmark policy rate by half a percentage point today, breaking successive 0.75-point interest rate increases.

With the expected rise, the federal funds rate will move up to a new target range of 4.25 to 4.5 per cent, which most officials believe is still not high enough to bring inflation down to the Fed's longstanding 2 per cent target.

"One [inflation] number won't be enough for the Fed, but it certainly is going to put [it] in a better mood," said Padhraic Garvey, regional head of research for the Americas at ING.

Energy and goods price rises have begun to slow this year, having previously helped to push up the annual increase in the CPI index to 9.1 per cent in June. But services-related costs have risen at an alarming pace, bolstered in part by an acceleration in wage growth as a result of the resilient labour market.

Fed officials have acknowledged that getting inflation under control will require a sustained period of low growth as well as higher unemployment, but have stopped short of forecasting an outright recession.

Additional reporting by Harriet Clarfelt in New York and James Politi in Washington

See Markets Insight

Ukraine. Russian strikes

Air war turns into battle of dwindling stockpiles

Kyiv is urging western backers to provide more modern anti-missile systems

ROMAN OLEARCHYK — KYIV
BEN HALL — LONDON

For two months, Russian forces have been pounding Ukraine's power network with the aim of plunging the country into darkness and breaking its resolve during winter. But in its latest bombardment, on December 5, only 10 of 70 Russian missiles made it past Ukrainian air defences, Kyiv said.

The claimed 87 per cent interception rate is a testament to the increasing effectiveness of Ukraine's air defence systems, mainly Soviet-era but recently augmented by modern western equipment and improved techniques.

However, Kyiv is burning through its ammunition at an alarming rate as it faces down Moscow in a battle of dwindling stockpiles — of Russian precision-guided missiles on one hand and Ukrainian interceptors on the other.

Kyiv is therefore urging western backers to provide more modern Nato-standard surface-to-air systems.

"If hundreds of rockets are fired at us, we knock down 70 to 80 per cent. Do they run out or not? Of course [they do]," said Colonel Yuriy Ignat, the Ukrainian air force's chief spokesman, referring to his side's munitions.

Major General Kyrylo Budanov, head of Ukraine's military intelligence, said last week that Russia was also depleting its stockpile of precision cruise missiles — an assessment shared by many western analysts. "They have enough for several more massive attacks," Budanov said, adding that the production of replacements was a slow process.

Russia began what have become almost weekly aerial strikes against Ukraine's critical infrastructure on October 10. On that day, Ukraine said it shot down 54 per cent of missiles and drones, resulting in widespread damage to electricity installations.

On November 23, 76 per cent of Russian missiles were shot down but the damage to a fragile power network was enough to cause nationwide blackouts. In last week's attack, Ukraine escaped further national outages, although there are still rolling power cuts.

Shell shocked: an official in Kharkiv last week examines missiles fired into the city by Russian forces
Aleksey Filippov/AFP/Getty Images

Kyiv's improving air defence capabilities demonstrate the contribution of western military technology to Ukraine's ability to defy Russian president Vladimir Putin's war plans.

Ukraine denied Russia air supremacy in the wake of the February invasion thanks to its Soviet-era arsenal of S300 and Buk surface-to-air missiles plus thousands of western-supplied portable air-defence systems. It has also adjusted its tactics, using mobile units in jeeps to chase down drones and cruise missiles with shoulder-launched Stinger missiles and UK-provided Starstreaks.

But ammunition and spares for the S300 and Buk systems, the mainstay of Ukraine's air defences, are dwindling. Ukrainian officials have confirmed a claim by British military intelligence that Russia has been firing X-55 nuclear missiles — with the nuclear warhead replaced by an inert one — simply to exhaust Ukrainian air defences.

Ignat revealed its units typically fire two S300s or Buks at every Russian missile to improve the chances of interception by what is now ageing kit.

Purchasing additional S300 or Buk missiles on the global market has proved difficult, apart from a batch obtained from Slovakia early in the war.

Britain's Royal United Services Institute warned in a report last month against "western complacency about the need to urgently bolster Ukrainian air defence capacity". It said if Ukrainian surface-to-air systems ran out of ammunition, it could open the skies to Russian heavy bombers with devastating consequences. Recently deployed western equipment has already demonstrated its value.

'If hundreds of rockets are fired at us, we knock down 70 to 80%'

Germany's Gepard mobile anti-aircraft guns, of which Ukraine has received 30 so far, have proved highly effective in taking down drones and low-flying missiles. However, the Swiss government has refused to authorise exports of Gepard's Swiss-made ammunition to a war zone and there is no ready alternative.

Kyiv has also received modern medium-range air defence systems from its allies, including an Iris-T system from Germany, with three more expected, and two batteries of Norwegian-US Nasams. But Ignat said Kyiv would need "hundreds" of these and other systems as it sheds its older arsenal.

G7 leaders promised on Monday to "continue to co-ordinate efforts to meet Ukraine's urgent requirements for military and defence equipment with an immediate focus on providing Ukraine with air defence systems".

What Kyiv has been most keen to acquire from Washington is the longer-range Patriot system, which can intercept ballistic missiles. The US administration has so far withheld approval but officials said it was under consideration, with an announcement possible this week. To date, Kyiv has had to settle for decades-old Hawk anti-aircraft batteries, including six from Spain.

Even if Moscow's cruise missile stocks are dwindling, it still possesses a vast arsenal of ballistic missiles. It also appears to have taken a new delivery of Iranian-supplied loitering munitions. They are noisy, slow and can be easily shot down. But they are hard to counter fully when launched in swarms. Above all, they are cheaper to purchase than the missiles used to intercept them.

Ukraine's air force said it shot down 10 of 15 Iranian Shahed kamikaze drones fired on Saturday evening, but those that evaded air defence systems temporarily knocked out most electricity supplies in the Black Sea port of Odesa, which affected grain exports.

Oleksiy Melnyk, a former Ukraine air force lieutenant colonel and now co-director of the Razumkov Centre think-tank in Kyiv, said Ukrainian air defences had made huge strides. But he added: "Trying to predict that Russia will one day run out of missiles is probably not a good strategy."

Emissions

EU proposes world's first carbon border tax despite trade fears

ALICE HANCOCK AND ANDY BOUNDS
BRUSSELS

EU lawmakers have agreed to introduce the world's first carbon border tax with the aim of raising environmental standards globally and protecting its domestic industry, despite concerns that the plans could breach World Trade Organization rules and spark trade disputes.

The deal, reached early yesterday after 10 hours of negotiations between European Parliament members and EU country representatives, means importers will have to buy permits for their carbon emissions at the same price paid by domestic producers under its emissions trading system.

Mohammed Chahim, a socialist MEP who led the negotiations for the parliament, said the agreement was a "win-win situation". It is provisional until a final set of negotiations this weekend, after which it must be approved by EU ambassadors. The carbon border adjustment mechanism (CBAM) would be "a crucial pillar of European climate policies", he said. "It is one of the only mechanisms we have to incentivise our trading partners to decarbonise their manufacturing industry."

Some issues remain outstanding and will be discussed at the weekend talks. They include export rebates, which industry has lobbied politicians to include in the final law, and the free greenhouse gas allowances currently received by some EU companies. Analysts say potential provisions on these would make CBAM vulnerable to challenge under WTO rules.

The CBAM is designed to protect against "carbon leakage" — the risk that EU industries could outsource manufacture of goods for the domestic market to regions with lower environmental standards.

"Such carbon leakage can shift emissions outside of Europe and therefore seriously undermine EU and global climate efforts," the European Commission said when the measure was first proposed in July 2021. It added that several countries, including Canada and Japan, were planning similar initiatives.

Governments across the EU are increasingly worried about potential deindustrialisation in Europe as energy bills force companies to cut production.

The introduction of generous tax credits to support the development of green technologies in the US through its Inflation Reduction Act has exacerbated concerns.

Until at least 2030, the CBAM will apply to iron, steel, cement, aluminium, fertilisers, hydrogen and electricity generation, as well as some manufactured products such as screws and bolts. Cars could also be included following a trial period starting next October.

EU companies in those sectors currently receive a certain number of free greenhouse gas allowances under the EU's emissions trading system and must then pay for permits to cover any additional greenhouse gases they emit. After October the free allowances will start to be phased out. But analysts have warned that retaining free allowances alongside the carbon border tax during the phaseout could violate WTO rules.

See Inside Business

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Published by: The Financial Times Limited, Bracken House, 1 Friday Street, London EC4M 9BT. Tel: +44 20 7873 3000; Fax: +44 20 7407 5700. Editor: Roula Khalaf.

Germany: Demirören Media, Hurriyet AS-Branch Germany, An der Brucke 20-22, 64546 Morfelden-Walldorf, +49 6105 327100. Responsible Editor, Roula Khalaf. Responsible for advertising content, Jon Slade.
Italy: Monza Stampa S.r.l., Via Michelangelo Buonarroti, 153, Monza, 20900, Milan. Tel. +39 039 28288201 Owner, The Financial Times Limited; Rappresentante e Direttore Responsabile in Italia: I.M.D.Srl-Marco Provasi - Via G. Puecher, 2 20037 Paderno Dugnano (MI), Italy. Milano n. 296 del 08/05/08 - Poste Italiane SpA-Sped. in Abb.Post.DL. 353/2003 (conv. L. 27/02/2004-n.46) art. 1 .comma 1, DCB Milano.
Spain: Bermont Impresion, Avenida de Alemania 12, CTC, 28821, Coslada, Madrid. Legal Deposit Number (Deposito Legal) M-32596-1995; Publishing Director, Roula Khalaf; Publishing Company, The Financial Times Limited, registered office as above. Local Representative office; C/ Infanta Maria Teresa 4, bajo 2, 28016, Madrid. ISSN 1135-8262.
UAE: Masar Printing & Publishing, P.O. Box 485100, Dubai. Editor in Chief: Roula Khalaf.
France: Publishing Director, Jonathan Slade, 46 Rue La Boetie, 75008 Paris, Tel. +33 (0)1 5376 8256; Fax: +33 (01) 5376 8253; Commission Paritaire N° 0919 C 85347; ISSN 1148-2753.
Turkey: Dunya Super Veb Ofset A.S. 100. Yil Mahallesi 34204, Bagcilar- Istanbul, Tel. +90 212 440 24 24.
Sweden: Responsible Publisher - Christer Norlander

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West Africa

Ghana hopes IMF loan deal will help to placate creditors

AANU ADEOYE — LAGOS

Ghana has agreed a $3bn loan with the IMF, moving the heavily indebted west African nation closer to a deal with creditors that would stabilise its economy after a year of turmoil.

The loan, which would provide funding for three years, is a staff level agreement between the fund and Ghanaian authorities. It must now be approved by IMF management and its executive board. Stéphane Roudet, the IMF's head of mission to Ghana, said yesterday the board would only approve the loan if Ghana restructured its debt with private sector and foreign government creditors.

Finance minister Ken Ofori-Atta said Ghana hoped to receive approval by "early next year".

Ghana announced the terms of its talks with private bondholders last month. It wants local bondholders to forgo interest payments and extend the maturity of their bonds while excluding haircuts on their principals. The Chamber of Corporate Trustees, a body representing private pension funds in Ghana, rejected the latest deal last week.

Bright Simons, vice-president of think-tank Imani, said a deal with domestic creditors would be difficult, with many of them resistant to current plans. "The government has to fix its approach to debt sustainability considerably," Simons said. "It has bungled it."

International bondholders were asked to take haircuts of up to 30 per cent, deputy finance minister John Kumah told radio Joy FM last month.

President Nana Akufo-Addo had previously said no one would have to take a haircut.

Global creditors only expect the terms of any restructuring to be agreed in talks next year. Kevin Daly of asset manager Abrdn said an accord with bondholders "should not be a major hurdle . . . as long as [the government] don't come out and dictate terms".

World Bank data show that Ghana had $27.4bn of external public and publicly guaranteed debt at the end of 2021.

Additional reporting by Jonathan Wheatley

Sanctions

Insurance dispute blocking oil tankers off Turkey resolved

IAN SMITH AND TOM WILSON — LONDON
AYLA JEAN YACKLEY — ISTANBUL

The sanctions-driven insurance dispute that had disrupted oil exports from Russia's Black Sea ports has been resolved, with maritime authorities saying 19 vessels had passed through the Turkish straits after providing satisfactory documentation.

Tankers had been forced to drop anchor near the Bosphorus and Dardanelles after Turkey demanded new proof of insurance in response to western sanctions on Russian oil.

Washington had hoped that a new price cap on Russian crude, which was designed to give vessels continued access to European insurance if the oil is sold for $60 a barrel or less, would ensure Russian shipments to third countries could continue after the introduction of EU sanctions last week.

But Turkey had blocked the vessels from transiting the straits for over a week after western insurers said they could not provide the blanket guarantee demanded, prompting US and UK officials to intervene with their Turkish counterparts. The Turkish straits are one of the main export routes for crude oil from Russia and Kazakhstan.

Turkey's maritime authority said yesterday that of 26 tankers that were waiting "because they had not met our country's justified request for an insurance confirmation letter", all but four had provided the requested documentation. As of yesterday, 19 had passed through the straits, it added.

Norway's Gard, part of the international group of 13 protection and indemnity clubs, also said on its website yesterday that a resolution had been found.

It advised its members to contact the club for the documentation needed for crude carriers. IGP&I, the umbrella group, could not immediately be reached for comment. Many of the ships affected had been carrying oil from Kazakhstan, in a sign of the possible unintended consequences of the G7's intervention in the oil market.

See Lex

INTERNATIONAL

Conflict leaves Berlin coalition stuck in 'crisis mode'

One year on from taking office, the Scholz government is having to rethink its agenda following invasion of Ukraine

GUY CHAZAN — BERLIN

It was to be Germany's most progressive government in a generation. One year on, those lofty ambitions have been eclipsed by a war in Europe that has plunged the country into an energy crisis, wreaked havoc on its public finances and reordered its policy agenda.

Olaf Scholz was sworn in as German chancellor last December, heading an unprecedented three-way coalition between the Social Democrats, Greens and the Free Democrats that promised a "fresh start" after Angela Merkel's 16-year reign. Its 141-page coalition agreement was titled: "Dare more progress."

But Russia's invasion of Ukraine in February threw a spanner in the works. "They promised a new awakening — but there's not much of that left," said Andrea Römmele, professor of communication in politics at the Hertie School in Berlin. "Instead they're stuck in a kind of permanent crisis mode."

A former mayor of Hamburg, Scholz had promised the "biggest industrial modernisation of Germany in more than 100 years". The country would, he pledged, green its economy and become a "pioneer in climate protection".

> 'In the long term, all these shadow budgets will lead to a palpable increase in government debt'

It would exit coal more quickly than planned, vastly increase wind and solar power and put 15mn electric cars on the roads by 2030. There were plans to build 400,000 flats each year, liberalise immigration rules and legalise cannabis.

Instead, most of the government's energy has been expended keeping the lights on. Since Russia's decision to reduce gas exports to Europe during the summer, Scholz's priority has been to ensure alternative supplies and avert the prospect of blackouts and gas rationing this winter.

In that he has largely succeeded. "Germany is winter-proof and safeguarded against crises," the chancellor told MPs last month. The government has spent billions on improving energy security, building an import terminal for liquefied natural gas in record time, ensuring gas reservoirs are 100 per cent full and taking control of two struggling gas importers, at a huge cost to the state.

Scholz also pushed through €300bn of emergency aid to cushion the impact of higher energy costs on companies and households, breaking the previous record for state aid set during the pandemic when he was finance minister.

He also fulfilled an election promise to raise the minimum wage, reformed Germany's widely hated system of jobless benefits and created a €100bn investment fund for the Bundeswehr, pledging to reverse years of underfunding of the armed forces.

"The government succeeded in ensuring social peace, it made sure the aid packages reached all social groups and no one was left out in the cold," said Uwe Jun, a political scientist at the University of Trier. "That meant Germany was spared the kind of big strikes and social upheaval you've seen in other countries, like the US and UK."

But all this came at a cost. The government is taking on about half a trillion euros of new debt, a particularly bitter pill for one of the coalition partners, the fiscally conservative Free Democrats (FDP). And because the FDP insists that Germany reinstate next year its "debt brake" — the constitutional cap on new borrowing suspended during the pandemic — much of the crisis spending is being channelled through off-balance sheet vehicles, a tactic many economists find questionable.

"In the long term, all these shadow budgets will lead to a palpable increase in government debt," said Jun.

The huge rise in expenditure may have been hard for the FDP to stomach, but the Greens have also had to make painful compromises. They agreed to the reopening of mothballed coal-fired power stations and a three-and-a-half-month extension to the life of Germany's last remaining nuclear reactors.

"We suddenly found ourselves having to renegotiate issues fundamental to our parties. while also carrying on the regular business of government," Ricarda Lang, the Greens co-leader told German radio. "It was like open-heart surgery."

Sometimes these renegotiations provoked tensions that threatened government stability. In October, Scholz was forced to assert his authority as chancellor, a rare event in German politics, to resolve a dispute over the future of nuclear power between the Greens and FDP. The two parties also locked horns over a controversial levy on gas consumers, designed to bail out gas importers such as Uniper, which was pushed through by the Green-controlled economy ministry. The conflict dragged on until Uniper was nationalised and the levy idea scrapped.

Priority change: Olaf Scholz, centre, with ministers in October — Clemens Bilan/EPA-EFE

More tension could be in the pipeline as the FDP's electoral fortunes continue to wane. It was kicked out of coalition governments in two important states this year and in a third did not even scrape together enough votes to make it into the regional parliament.

FDP leader Christian Lindner, who is also finance minister, insisted after these defeats that the party should raise its profile in government. "The FDP will be the party that sticks to its red lines, come hell or high water," said Römmele. "The Greens are much more pragmatic but the FDP is now in permanent campaign mode."

It is not just the FDP that is suffering. A survey this month by pollsters Insa for Sunday paper Bild am Sonntag showed backing for the SPD, Greens and FDP together was at 44 per cent, down from 52 per cent at last year's election. So if voters went to the polls today the "traffic-light coalition", named after the parties' traditional colours, might not be returned to power.

The opposition Christian Democrats (CDU) blame Scholz's lack of leadership. "The chancellery's task is to bring the government parties together, and it's not doing that," said Mario Czaja, the CDU general secretary. "They keep blaming each other in public when things go wrong."

Business leaders hope the coalition's second year in office will deliver more clarity to government policy. "[It's] got to switch as quickly as possible from crisis mode to actually building something," said Siegfried Russwurm, head of the BDI, the main German business lobby. The coalition agreement negotiated last year was marked by "the ambition to change our country . . . that can't just remain lip service".

Janan Ganesh see Opinion

Food security

Russian fertiliser tycoon seeks to resume ammonia exports

POLINA IVANOVA — BERLIN

The influential sanctions-hit Russian fertiliser billionaire Dmitry Mazepin has called on global commodities traders to unblock a UN-brokered deal to resume shipments of ammonia, the fertiliser ingredient seen as essential for alleviating a global food crisis.

The UN wants exports of Russian ammonia through a Ukrainian pipeline to be resumed in order to ease global fertiliser prices, while EU member states have called for the bloc to make a clearer exemption from sanctions for Russian agriculture exports in general amid escalating food shortages.

Kyiv and western capitals are loath to allow the Russian fertiliser sector to reap export profits when sanctions are supposed to be crippling Russia's economy, but they are under pressure to protect vulnerable countries from food and fertiliser shortages.

A deal thrashed out by Russia and Ukraine, via the UN, in Istanbul this summer and renewed last month opened the way for exports of Ukrainian grain blockaded by Russia's invasion. The agreement included a pledge to restart exports of ammonia, a key ingredient in the production of nitrate fertilisers, Mazepin said.

"I asked for help, through diplomatic channels, to once again revisit those agreements that were signed in Istanbul regarding the grain deal to open ammonia," he said in an interview with the Financial Times, of a November meeting he had with Russian president Vladimir Putin.

Mazepin, founder and former majority owner of Russian fertiliser producer Uralchem, outlined a proposal for a deal that concerns a pipeline connecting its TogliattiAzot plant to a Ukrainian port.

Dmitry Mazepin: exports could start immediately, many bound for Africa

The plan would involve a US or other non-Russian trading company, he said, "chosen from among the top three or four international traders", purchasing ammonia in Russia and transporting it across Ukraine to Odesa, where it would be shipped across the Black Sea. Mazepin said exports could start immediately, adding that about 80 per cent of output would head to African countries. "We are ready to resume pumping."

Mazepin, who chairs the fertiliser committee of Russia's main oligarch talking shop, is seen as an increasingly influential figure after his meeting with Putin late last month.

Russia's bombardment of Ukraine's cities has made it difficult for the country's negotiators to accept the reopening of a route that could allow Russia to ship millions of tonnes of ammonia — worth about $1,000 a tonne at current prices — each year via Ukraine.

The UN hopes that restoring ammonia volumes, however, will push down global prices. Some African nations have also blamed fertiliser shipment delays on EU sanctions, which do not target agriculture but have led payment, shipping and insurance sectors to avoid dealing with Russian suppliers.

EU capitals in a position paper last week urged Brussels to make a clearer exemption from sanctions for Russia's food and fertiliser exports to ease deliveries to poorer countries. EU states are debating possible amendments to the sanctions this week.

Mazepin echoed this call, arguing that although agriculture was supposed to be ringfenced from sanctions, international banks, insurers and other entities along the supply chain were still refusing to work with companies such as Uralchem.

After he was placed under individual sanctions by Brussels in March, Mazepin reduced his stake in Uralchem to 48 per cent, below the controlling threshold, and stepped down as chief executive. All owners of Russian fertiliser companies that were under sanctions did the same.

Additional reporting by Emiko Terazono in London, Max Seddon in Dubai and Roman Olearchyk in Kyiv

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INTERNATIONAL

Trade dispute

China fights US chip sanctions at WTO

Beijing says it must defend 'legitimate rights' against semiconductor controls

EDWARD WHITE — SEOUL
DEMETRI SEVASTOPULO — WASHINGTON
ELEANOR OLCOTT — TOKYO

China has hit back against sweeping US export controls on chips, filing a dispute with the World Trade Organization and escalating the technology war between the two countries.

China's commerce ministry said its WTO complaint was a legal and necessary measure to defend its "legitimate rights and interests", after the US Department of Commerce introduced sanctions in early October to make it harder for China to buy or develop advanced semiconductors. "At a minimum, the case is about China pushing back on how it's perceived as an unfair actor in the global trading world," said Ben Kostrzewa, an expert on US-China trade relations at Hogan Lovells.

The complaint is the first step in a WTO mediation process, in which the case would normally be put before the Appellate Body, which has been suspended due to disagreements among member states. Kostrzewa said the complaint was unlikely to "create any legal effect" unless the group resumed its work.

The move came just weeks after US president Joe Biden and his Chinese counterpart, Xi Jinping, used their first in-person meeting as leaders to signal a joint desire to improve ties after relations plunged to a multi-decade low.

China's complaint also came days after a landmark ruling in which a WTO panel backed Beijing against Washington. In a report on December 9, the WTO said the US was not justified in arguing the Trump administration's 2018 tariffs on steel and aluminium from China and other countries were necessary to protect its national security.

"The Chinese knew this was coming, and they almost certainly waited for this to strengthen their hand on the export control issue," said a western official.

The export controls were aimed at hindering China's ability to use high-end US tech for military applications. The moves stop US companies from exporting tech to Chinese groups producing high-end chips in most modern devices.

A US Trade Representative official said: "As we have [said] to the PRC [People's Republic of China], these targeted actions relate to national security, and the WTO is not the appropriate forum."

The export controls rocked the global semiconductor supply chain when they were unveiled, threatening to derail decades of investment in China by the world's biggest tech groups. After the announcement of the controls, Beijing increased spending on research and development to counter what it has termed a "blockade" on its tech sector.

Domestic tech groups Alibaba and Tencent have been enlisted alongside state-backed groups such as the Chinese Academy of Sciences to create semiconductor intellectual property that will bolster the country's capabilities.

The US has also been negotiating with Japan and the Netherlands on an export controls deal to bar companies from selling chipmaking tools for advanced Chinese semiconductors. White House national security adviser Jake Sullivan said on Monday the US had been talking to partners about a "broad alignment".

Additional reporting by Kathrin Hille in Taipei and Qianer Liu in Hong Kong

See FT Big Read

Pandemic

Hong Kong drops Covid tracing app and traveller ban in bars

PRIMROSE RIORDAN — HONG KONG

Hong Kong will scrap some of its last Covid-19 restrictions that have crushed the city's economy and battered its reputation as a financial hub.

From today, travellers to Hong Kong will be allowed to visit restaurants and bars within their first three days of arrival, while residents will no longer have to scan a contact tracing app to enter pubs, churches, gyms and other public venues.

The decision follows Beijing's U-turn on its zero-Covid policy this month. The Chinese mainland jettisoned many rules aimed at eliminating cases after rising economic and social costs from prolonged lockdowns and mass testing sparked rare nationwide protests.

China has now scaled back testing and contact tracing amid the biggest Covid outbreak since the pandemic started in Wuhan in 2020.

"We have considered the data and risk, and one of the factors considered was the risk brought in by imported cases is lower than the risk of infection in the community," John Lee, Hong Kong's chief executive, said yesterday.

"You will no longer have to scan the LeaveHomeSafe [contact tracing] pass, but . . . you will need to show your vaccine pass for entry."

Yesterday, Hong Kong, a city of 7.5mn people, recorded 14,717 new cases.

Despite the easing of restrictions, the city's pandemic rules remain more stringent than those in many other global cities. Wearing masks outdoors, for instance, is still mandatory. Visitors will still also have to test on arrival and endure a compulsory five-day isolation if they return a positive result.

While Hong Kong was not subject to the extreme restrictions seen in mainland China, it maintained an elimination policy and weeks-long government quarantines until a devastating outbreak made the measures redundant earlier this year.

The measures in effect sealed the city off from the world and spooked international business, especially after medical authorities separated some parents from their children after they contracted Covid.

Hong Kong's reputation as a stable business hub had already been rocked by a political crackdown that followed pro-democracy protests in 2019.

Since September, Hong Kong has slowly eased restrictions and scrapped hotel quarantine for incoming passengers. In November, the Hong Kong Sevens rugby tournament returned for the first time since 2019.

The city's economic recovery, however, has been hamstrung by the continued closure of its border with the mainland, which has halted the flow of Chinese tourists. Hong Kong's gross domestic product fell 4.5 per cent year on year in the third quarter of 2022, which the government blamed on stagnant cross-border flows with the mainland and tricky global conditions.

"The real GDP growth forecast for 2022 as a whole is revised down to minus 3.2 per cent, from minus 0.5 per cent to 0.5 per cent as announced in the August round of review," Adolph Leung, the Hong Kong government economist, wrote last month.

Energy. Breakthrough

Scientists move step closer to fusion dream

Landmark experiment offers fresh hope of a zero-carbon alternative to fossil fuels

TOM WILSON — LONDON

US scientists have achieved energy gain in a fusion reaction for the first time, US energy secretary Jennifer Granholm has confirmed, heralding the breakthrough as evidence that the technology could provide an abundant, zero-carbon alternative to fossil fuels.

"This is a landmark achievement," Granholm said at press conference in Washington yesterday, confirming the breakthrough first reported by the Financial Times.

"We have taken the first tentative steps towards a clean energy source that could revolutionise the world," said Jill Hruby, administrator of the National Nuclear Security Administration.

But how much closer does this breakthrough take the energy sector to the dream of fusion power?

What is fusion?

Fusion is the reaction that powers the Sun. It involves heating two hydrogen isotopes — normally deuterium and tritium — to such extreme temperatures that the atomic nuclei fuse, releasing helium and vast amounts of energy in the form of neutrons.

Unlike nuclear fission, the process produces no long-lived radioactive waste. It also emits no carbon. Scientists estimate a small cup of the fuel could power a house for more than 800 years.

Fusion's supporters describe it as the Holy Grail of clean energy: a technology that could theoretically provide near limitless, zero-carbon power.

But although Soviet scientists developed a fusion machine in the 1950s using a process called magnetic confinement fusion, until now no group had been able to produce more energy from a fusion reaction than it consumed — a scientific milestone known in the field as scientific energy gain or target gain.

What have US scientists achieved?

Scientists at the US government's National Ignition Facility at the Lawrence Livermore National Laboratory in California have achieved energy gain in the reaction for the first time.

The $3.5bn NIF, which opened in 2009, was primarily designed to test nuclear weapons but has since been used to advance fusion energy research.

Magnetic confinement, the most widely studied approach to fusion, uses huge magnets to hold the deuterium-tritium fuel in place while it is heated.

The NIF uses a different process, called inertial confinement, in which it fires 192 lasers at a tiny capsule of the fuel. The lasers heat the fuel to more than 3mn degrees Celsius, which blows off the surface of the target capsule, causing what the NIF calls a "rocket-like" implosion. That compresses and further heats the fuel until the hydrogen atoms in the deuterium and tritium fuse, releasing helium and energy.

In the experiment on December 5, the reaction produced about 3.15 megajoules of energy, which was about 150 per cent of the 2.05 megajoules of energy in the lasers, the laboratory said. The gain was even greater than the preliminary results reported by the FT.

Have they cracked fusion power?

No. Achieving energy gain has been seen for decades as a crucial step in proving that commercial fusion power stations are possible. However, there are still several hurdles to overcome.

Energy gain in this context only compares the energy out with the energy in the lasers, not the total amount of energy pulled off the grid to power the system. In fact, each shot requires 330 megajoules of electrical energy, delivered in a 400-microsecond burst.

> 'We have taken the first tentative steps towards a clean energy source'

Scientists still estimate commercial fusion will require reactions that generate 30 to 100 times the energy going in. The NIF also makes a maximum of one shot a day, whereas an internal confinement power plant would probably need to complete several shots a second.

"The experiment demonstrates unambiguously that the physics of laser fusion works," said Dr Robbie Scott, a plasma physicist who has contributed research to the NIF. "Next steps include the demonstration of even higher fusion energy gain and the further development of more efficient methods to drive the implosion."

How does it compare with others?

Last year in China, a magnetic confinement machine, known as a tokamak, called East — the Experimental Advanced Superconducting Tokamak — managed to sustain a fusion reaction at 120mn degrees Celsius for a record 101 seconds. Temperatures over 100mn degrees, generally required for magnetic confinement fusion, had never been sustained for such a long time.

In May, researchers at the world's largest, most powerful tokamak in Oxford, the Joint European Torus, produced a record 59 megajoules from a sustained reaction lasting five seconds. That was enough energy to boil about 60 kettles and more than doubled the previous energy output record of 22 megajoules, achieved by JET in 1997.

Neither reaction demonstrated an energy gain as the NIF did, but neither facility had prioritised achieving gain, experts said.

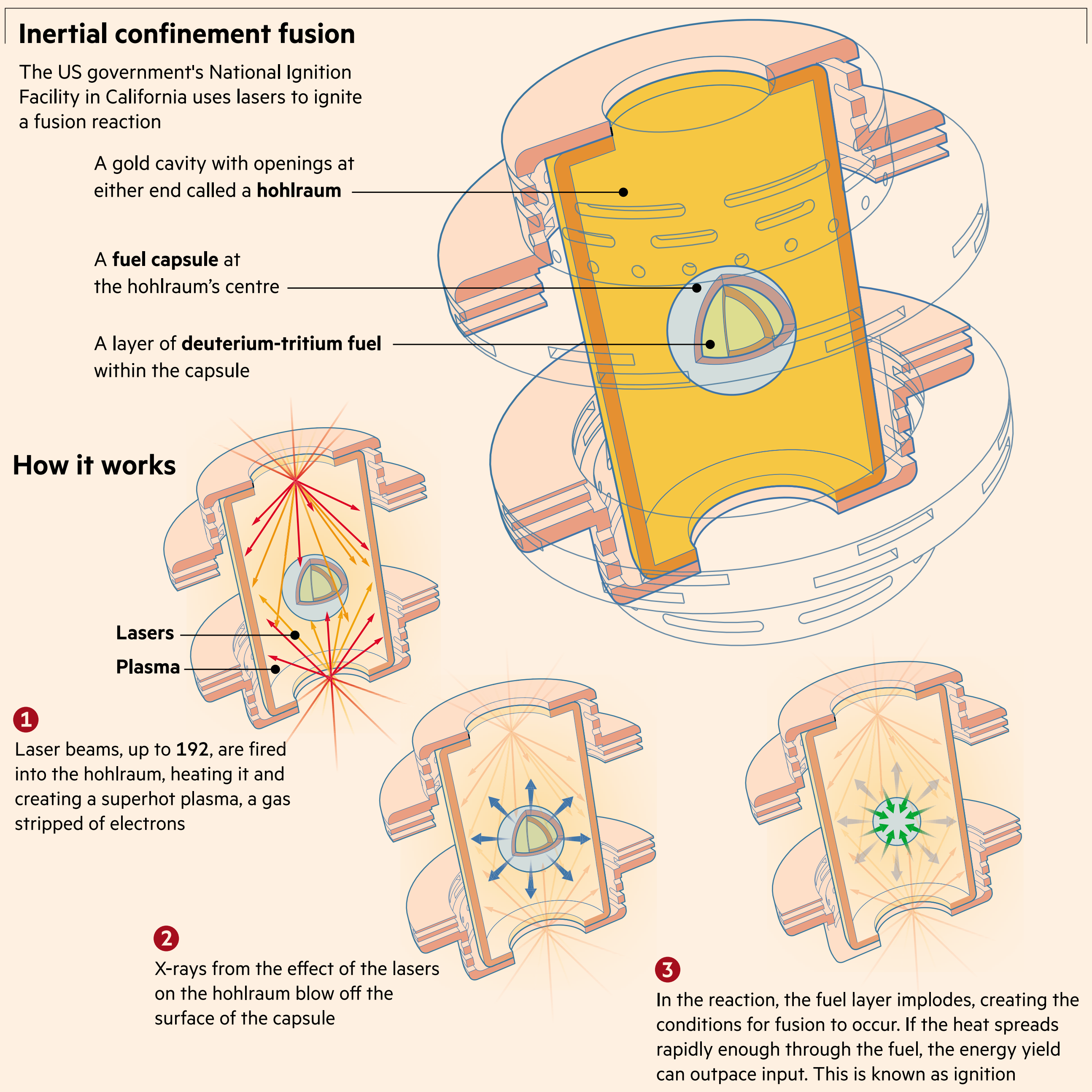
What happens next?

The sector hopes the breakthrough will galvanise interest and investment.

Historically, most fusion science has been done by publicly funded laboratories, such as the NIF and JET, but in recent years investment has also flooded into private companies promising to deliver fusion power in the 2030s.

Melanie Windridge, a plasma physicist who runs the consultancy Fusion Energy Insights, said the NIF, which cost $3.5bn to build, was 13 years old and based on 1980s laser technology. "It just shows what could be possible with the newest equipment," she said.

See The FT View



Sources: Lawrence Livermore National Laboratory; US Department of Energy; FT research. Graphic: Ian Bott

World Cup Morocco's success gives diaspora a chance to celebrate and Arabs a source of pride

LEILA ABBOUD AND SARAH WHITE
PARIS
ANDY BOUNDS — BRUSSELS

Jamel Debbouze, one of France's most famous stand-up comedians, could not come up with a joke when asked how he felt about France facing Morocco in the World Cup.

"I want to see the match but I'm also dreading it," the 47-year-old dual national, who was born in Paris to parents from Morocco, said in a television interview. "It is as if my father was playing my mother! An impossible dilemma."

Many in France's large Moroccan community will be feeling such intense emotions about today's semi-final, in which the Atlas Lions will become the first African team to reach this stage of the tournament.

Their success has inspired fervour well beyond the north African kingdom and its 5mn-strong diaspora because many people in the Middle East, Africa and parts of Asia, particularly Muslims, have adopted the team. Entrenched rivalries between countries faded into a shared sense of pride as the Lions upset Belgium, Spain and Portugal.

The match against France, however, casts a spotlight on a very particular historical relationship. Morocco was a French protectorate from 1912 to 1954, although two slivers of the country were under Spanish influence. After independence, which preceded France's bitter war and the end of its colonial rule in neighbouring Algeria, many Moroccans were recruited to work in French mines and factories, where they contributed to the postwar economic boom.

People from Morocco or with Moroccan parents are the second-largest immigrant group in France after those of Algerian descent, and the diaspora also has a big presence in Spain, Italy, the Netherlands and Belgium. Many in the second and third generations are citizens of the European countries in which they live.

This World Cup has given them a rare chance to openly celebrate their cultural heritage. This is particularly the case in France, where far-right political parties are on the rise and the ethos of the French republic urges people to see themselves as citizens first and to leave religion, race or cultural differences in the private sphere.

After Morocco beat Portugal on Saturday, some 25,000 fans converged on the Champs Elysées in Paris to celebrate. Among the many red and green Moroccan flags were some from Algeria, Tunisia and Palestine in a sign of how the team has become a vehicle for people to convey a broader sense of Arab and African pride.

In Brussels, each Moroccan victory has brought crowds with flares and fireworks on to the streets. Bilal Abdoun, an office manager whose grandparents emigrated to Belgium, said the Lions had moved him close to tears. Their performance would improve the self-confidence and reputation of the Moroccan community abroad, he predicted.

"We have this image of Moroccans that steal and cause trouble on the street," Abdoun said. "But now we showed the good face of Morocco. The players have this power."

The squad has strong ties to the diaspora, too. Fourteen of the 26 players in Qatar were born outside Morocco, the highest proportion of any team in the tournament. These include Madrid-born star Achraf Hakimi, who scored the winning penalty against Spain.

Coach Walid Regragui, born in the Paris suburb of Corbeil-Essonnes, has vaunted the merits of what he called a "milkshake" side: a blend of Moroccan talent imprinted by other football cultures. "I think that from now on the whole world is behind Morocco," Regragui said on Saturday.

In France, some scenes from Morocco's victories have struck a chord. A video of Sofiane Boufal, a Paris-born player, dancing on the pitch after the quarter-final with his mother, who was wearing a Muslim headscarf, went viral.

But the video was also laden with significance in staunchly secular France. The French have restrictive legislation on the wearing of religious symbols and garments — they are banned in schools and for civil servants.

"Having mothers sitting in the stadium praying for the sons and players praying on the field, it's natural for the Moroccan team and fine in Qatar, but it would not have been so positively received had the World Cup happened in France," said Sahar Amarir, a French and Moroccan citizen who works at a political risk management firm.

The Morocco fans' celebrations in Europe sparked a backlash from far-right parties and commentators, including after the partying in Brussels and Antwerp triggered clashes with police. Interior minister Gérald Darmanin promised a beefed-up presence of 2,000 police officers on the Champs Elysées today to ensure fans could enjoy the "festive moment" in an orderly manner.

Eric Zemmour, who ran in this year's French presidential election on an anti-immigration platform, criticised the celebrations as being unpatriotic. "I just think it's weird that there are people who are supposedly French who are celebrating Morocco's victory on the day that France also won," he said.

Rachid Zerrouki, a 30-year-old teacher in Marseille who moved to France from Morocco in his teens, said such thinking was out of step with the experience of millions of people who have mixed backgrounds.

"In France it's not easy to be multicultural, and maybe this moment can help change that a bit," he said. In any case, nothing would ruin his enjoyment of the match. "It's amazing that my two countries have gone so far in the World Cup. Whatever happens, I'll be in the final!"

Joy: Morocco fans in Paris react after beating Spain — Yoan Valat/EPA-EFE/Shutterstock

Big short Hedge funds that profit from falling stock prices enjoy bumper year after patience during bull run pays off ➔ PAGE 7

Companies & Markets

Checkout.com lowers internal valuation after tech's retreat

- Sharp cut to $11bn as mood shifts
- Staff told of equity awards change

IVAN LEVINGSTON — LONDON

Checkout.com, Europe's most valuable private tech group, has slashed its internal valuation to about $11bn, becoming the latest high-flying start-up forced to respond to the rout in tech stocks and falling investor sentiment.

The UK group told employees last month of the valuation drop, according to people familiar with the move.

Alongside that reduction, the company lowered the price at which staff can exercise stock options. That had been set at about $252 a share, some of the people said. The level has been lowered to about $65, two people said.

> Venture capitalists have pulled back from further deals this year and pushed for a focus on profits

Checkout.com had secured a $40bn valuation in January from investors including US group Tiger Global, asset manager Franklin Templeton and Singapore sovereign wealth fund GIC. At that time, the $1bn funding round represented a trebling of the payments group's valuation in just a year.

Slashing its internal price — which is separate from the investor-determined valuation — benefits staff by reducing the cost of their company equity. It gives employees scope for further gains in the case of future deals, such as an IPO. Other start-ups, including Stripe and Instacart, have made similar moves.

The reassessment signals how rising rates and faltering listed tech stocks are filtering through to private markets. After pouring money into start-ups last year, venture capitalists have pulled back from further deals this year and pushed for a focus on generating profits rather than pursuing growth at all costs.

"Checkout.com recently announced to our employees that we will align equity awards to an updated tax valuation that reflects the current macroeconomic conditions," the company said.

"This gives our employees the opportunity to share more meaningfully in the potential economic upside as we continue to grow our business. We are focused on building and scaling a generation-defining business that enables global brands and their communities to thrive in the digital economy."

Checkout.com was founded in 2012 by chief executive Guillaume Pousaz and processes payments to a variety of businesses across ecommerce, such as Pizza Hut and Netflix.

The company has generated significant volume from its work with crypto groups such as Binance and Coinbase. Crypto exchanges have seen volumes plummet this year amid a broader drop in digital asset prices, while FTX collapsed into bankruptcy.

Since Checkout.com's $1bn funding deal in January, tech valuations have plunged. European tech companies have seen more than $400bn in market value wiped out since the peak of the 2021 boom. The funding crunch has hit fintech companies in the region, with the valuation of buy-now-pay-later group Klarna falling from $46bn to $7bn after a funding round in July.

Payments companies broadly have struggled this year against a backdrop of slowing ecommerce sales. Dutch rival Adyen has seen its stock drop about 40 per cent this year while US competitor Stripe cut its own internal valuation by 28 per cent in July.

Stripe also axed 14 per cent of its workforce in November as the company's founders said they had been "too optimistic." Checkout.com implemented its own lay-offs, cutting 5 per cent of its staff in September.

See Lex

Briefed for action Financier Windhorst offered role at La Perla to wife of H2O chief Crastes

Exposed: La Perla's thinly traded shares have soared more than 70 per cent since September — Casimiro/Alamy

CYNTHIA O'MURCHU AND ROBERT SMITH — LONDON

Lars Windhorst offered a position at his luxury lingerie brand La Perla to the wife of the chief executive of H2O Asset Management, which was pouring its investors' money into the controversial financier's ventures.

The proposal, first made in 2019, months before the Financial Times exposed the scale of H2O's exposure to Windhorst, underscores the close relationship that blossomed between the German financier and H2O's chief executive, Bruno Crastes.

France's financial regulator last month recommended banning Crastes from the investment industry for a decade, fining him €15mn and levying a record €75mn fine against H2O for "grave" rule breaches related to the company's extensive investments in illiquid bonds tied to Windhorst. A final decision is pending.

In early 2019, Windhorst invited the H2O chief's wife, Laurence Crastes, to head a planned flagship store in Monaco, according to five people familiar with the arrangement. Laurence Crastes subsequently visited La Perla's headquarters in the Italian city of Bologna, researched suitable locations for the shop and shared her findings with La Perla.

Laurence Crastes, who is not accused of any wrongdoing, was not paid by La Perla for her efforts and did not end up taking a position at the company, according to two of the people. Plans to open La Perla's Monaco store were ultimately shelved.

Months after Windhorst made his offer, H2O was plunged into crisis when the FT revealed it held more than €1bn of illiquid bonds linked to the German, who has presided over several bankruptcies and has received a suspended prison sentence in his home country.

Windhorst's representative said "he did not offer any role or job or anything to Ms Crastes". H2O, Crastes and La Perla declined to comment.

Windhorst's investment company, Tennor, acquired heavily indebted La Perla for €1 in 2018 from Silvio Scaglia, an Italian who had sued the German financier for allegedly failing to settle bond trades. The case was settled out of court.

H2O that year bought more than €300mn of the €500mn bonds Windhorst raised against the lossmaking business. La Perla listed its shares on France's junior stock market Euronext Growth in September 2019.

La Perla's shares and bonds are among the assets in "side pockets" H2O established over two years ago to isolate €1.6bn of its investments linked to Windhorst. Recent filings show that H2O has marked down the value of its La Perla bonds to less than 7 cents on the euro.

Moderna and Merck hail mRNA cancer vaccine trial

JAMIE SMYTH — NEW YORK

Moderna and Merck are preparing to launch the first phase 3 trial of a messenger RNA cancer vaccine after a study suggested it could be used to treat an aggressive type of skin cancer.

Data released by Moderna yesterday showed that a combination of the company's experimental cancer vaccine and Merck's immunotherapy drug Keytruda reduced the risk of death or recurrence of melanoma in high-risk patients by 44 per cent compared with treatment using only Keytruda.

The phase 2 randomised trial enrolled 157 patients who had already undergone surgery related to melanoma and tracked them for a year. Some received nine doses of the cancer vaccine, codenamed mRNA-4157/V940, along with Keytruda. Others were given Keytruda alone, the standard treatment for high-risk melanoma.

Stéphane Bancel, Moderna chief executive, said the results had emboldened Merck and Moderna to begin a larger phase 3 trial that regulators demand before approving a new treatment. The vast majority of drugs that succeed in phase 2 studies subsequently fail in the next stage of trials.

The companies would also test the combination in other kinds of cancer. "We believe that this should work in many tumour types, not only melanoma," Bancel said in an interview.

Moderna shares surged as much as 25 per cent to $207.37 in early trading yesterday, while Merck shares were up almost 1 per cent.

Scientists have long studied the potential of using mRNA technology — which is best known for successfully developing Covid-19 jabs — to deliver a vaccine that teaches the body's immune system to target cancer tumours.

Jeffrey Weber, principal investigator of the study and deputy director of the Perlmutter Cancer Center at NYU Langone, said the findings provided the first randomised evidence that a personalised neoantigen vaccine could be beneficial in melanoma cases. Weber is a paid consultant for Merck and Moderna.

Some analysts urged caution. Daina Graybosch, of SVB Securities, said the phase 2 results were impressive but a detailed readout of the results would be needed to bolster confidence that success could be repeated in a larger trial.

Additional reporting by Hannah Kuchler in London

More cash for EU industry is not the answer to the US green deal

INSIDE BUSINESS
EUROPE

Peggy Hollinger

Why would any company turn down a subsidy if it were on offer? Certainly few, if any, businesses would openly admit they do not need the new subsidies being mooted by European Commission president Ursula von der Leyen as a tool to ensure the future of the bloc's green transition.

Her call for a new fund comes after Washington introduced a bumper package of green subsidies with the Inflation Reduction Act, comprising $369bn in federal tax breaks and incentives for the development or adoption of clean technology with US content.

It has sparked an outcry from European politicians who complain that by linking support to domestic content, the package flouts global trade rules.

The Buy American approach has prompted businesses across the bloc — already struggling with higher energy prices than US rivals — to threaten to shift clean technology investment from the EU to the US.

But the truth is that Europe is already spending far more than the US on the green transition. Daniel Gros, board member at the Centre for European Policy Studies and former economist at the IMF, estimates that the annual total of close to $40bn provided by the IRA is "less than half the amount spent by EU countries on renewables alone" — or $84.5bn in EU and member state funding for 2021. As a percentage of gross domestic product that comes to about 0.5 per cent for the EU and a projected 0.2 per cent for the US, he argues.

The International Energy Agency also calculated that, as of October 2021, almost three quarters of public spending on clean energy was allocated in Europe.

Roughly half the bloc's €800bn NextGenEU programme — the flagship initiative to ensure a sustainable recovery from the pandemic — is dedicated to greening infrastructure, public services, housing and more. All that work has to be done by businesses.

On top of that, Europe's green deal investment plan pledges that the EU budget will provide more than €500bn over 10 years for climate and environment projects. It specifically targets the "emergence of new, clean energy and circular economy industries" with funding for projects such as the installation of electric vehicle charging stations or residential heating, themes addressed by the IRA.

> Little has been done to untangle or simplify Europe's complex web of funding mechanisms and regulations

The argument for new money funded through common debt does not stack up — not least because business may eventually have to foot the bill through higher taxes.

But that does not let the EU off the hook. There is still much that can be done to improve the investment climate for the EU's energy transition. The IRA has the benefit of being very simple to understand and apply. If an investment meets the criteria, the corporate tax break lasts up to 10 years. If a product has a certain level of US content, bigger credits can be granted. The majority of support will be managed through a single agency — the US Treasury.

Such a simple, common package of incentives is difficult to orchestrate in a market of 27 member states that retain sovereignty over tax matters. It would also be difficult for the EU to introduce a Buy European requirement, given the bloc's commitment to an open rules based global trade system. In fact many sectors — such as the car industry — do not want such a provision as it could backfire in other markets.

But Europe can address the apparent contradictions and overlapping reach of some EU policymaking. The rising burden of regulation, for example with multiple revisions to the industrial emissions directive or the sustainable chemicals strategy, creates uncertainty.

Second, a study of the IRA for the commission this month noted that the EU's green transition support was spread across "a wide range of high-level policy initiatives such as the European Green Deal, the National Energy and Climate Plans, the REPower EU plan, the Recovery and Resilience Facility, Horizon Europe, LIFE, InvestEU, the Innovation Fund and the European Cohesion Funds". Imagine trying to navigate that complexity.

Von der Leyen has talked about simplifying state aid rules. This has already been done a few times in recent years and has accelerated the delivery of support. Yet little has been done to untangle or simplify the complex web of funding mechanisms and regulations that have built up over the past two years of crisis. This should be a priority. If it is simpler to understand where support lies, businesses might be more inclined to invest.

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Financials

Danske Bank to pay $2bn over US fraud

Lender admits conspiracy in money-laundering scandal at Estonia branch

STEFANIA PALMA — WASHINGTON
RICHARD MILNE — OSLO

Danske Bank has pleaded guilty to defrauding US banks and agreed to pay a $2bn penalty to resolve one of the biggest money-laundering scandals in recent years.

Denmark's largest bank yesterday accepted one count of conspiracy to commit bank fraud and agreed to pay about $1.2bn in criminal forfeiture to the US. It will also pay $672mn to Danish authorities, as well as a civil penalty of roughly $178mn to the US Securities and Exchange Commission.

The Department of Justice said Danske had defrauded US lenders in relation to anti-money laundering measures in its Estonia branch, allowing "high-risk customers", including some from Russia, to access the US financial system.

The move "demonstrate[s] that the DoJ will fiercely guard the integrity of the US financial system from tainted foreign money — Russian or otherwise," Lisa Monaco, US deputy attorney-general, said.

According to court documents cited by the DoJ, Danske's Estonia branch attracted foreign customers between 2008 and 2016 by allowing them to transfer large sums of money through it "with little, if any, oversight". The DoJ said the branch processed $160bn

> 'The DoJ will fiercely guard the integrity of the US financial system from tainted foreign money'

through US institutions on behalf of these clients and conspired with them to mask the real nature of the transactions, sometimes via shell companies.

US authorities said the bank knew by at least February 2014 that some of these customers were involved in potentially criminal behaviour, but lied to US banks about the Estonia branch's anti-money laundering programme.

The SEC yesterday also charged Danske with fraud for misleading investors on anti-money laundering compliance shortcomings in the Estonia branch.

Danske ousted its chief executive and chair in 2018 after revealing that much of the €200bn of cash that flowed through its Estonian branch from 2007 and 2015 was suspicious.

While much of the money came from Russia and other ex-Soviet states, the Danish bank has never said how much proved to be actual money laundering. Danske booked a charge of DKr14bn ($1.9bn) in October, on top of an initial provision of DKr1.5bn from 2018, to resolve all money-laundering probes, leading its shares to rise 11 per cent.

The bank also lost its next chief executive, who was brought in to clean up the institution, when he was implicated in a separate money-laundering scandal at a Netherlands-based lender where he previously worked.

Thomas Borgen, Danske's chief executive from 2013 until 2018, last month won a court case against more than 100 institutional investors suing him for $350mn over the scandal. But Danish media yesterday reported that Borgen had said those investors were appealing against the judgment.

Technology

India's Paytm says $103mn share buyback plan is 'sign of confidence'

CHLOE CORNISH — MUMBAI

Lossmaking Indian payments company Paytm has voted to buy back up to Rs8.5bn ($103mn) of shares, after its stock price fell by two-thirds since its initial public offering 13 months ago.

The board approved a plan yesterday to repurchase a maximum of 10.5mn shares at Rs810 rupees each, 50 per cent more than the closing price of Rs538.

Paytm's founder and chief executive Vijay Shekhar Sharma said a buyback "at this stage will be immensely beneficial for our stakeholders", adding: "We feel confident to generate healthy revenues and cash flows to invest in sales, marketing and technology."

The SoftBank-backed technology company was once a darling of India's booming start-up scene and raised $2.5bn in the country's biggest ever IPO in local currency terms in November 2021, valuing Paytm's parent company One97 Communications at $20bn.

But concerns about Paytm's high valuation, how it would reach profitability and a global tech downturn have turned it into one of India's worst market debuts, derailing a string of expected IPOs by other tech groups.

In its filing yesterday, Paytm said the buyback was "a sign of confidence that the company is on a clear path to deliver

> The move 'seems to be more like a face-saving action' that could also see some early investors exit

cash flow profitability". It added that the buyback "will not have any impact on its growth plans in the near future or on its profitability plans".

Some investors have criticised the buyback plan, questioning the strategy to shore up Paytm's share price rather than using the cash for the business.

"There is little merit in bucketing cash this way," said Institutional Investors Advisory Service, a proxy adviser.

Paytm's share buyback "seems to be more like a face-saving action . . . and could incidentally provide an opportunity for some early investors to exit," said Deepak Jasani, head of retail research at HDFC Securities.

Sharmila Gopinath, a governance expert, suggested it was "far too soon" for a newly listed company to be doing a buyback. "You came to market for a reason. You needed equity. But then within a year, you are buying back shares, without transparency as to why. Of course, the market is concerned," she said.

Paytm has endured a difficult period as a public company as investors worry about profitability and mounting competition in the digital payments sector from Google and Indian conglomerates such as Tata. It has also suffered some regulatory setbacks, with the central bank rejecting its application for a payments aggregator licence last month.

In November, Paytm reported 76 per cent growth in revenue from operations to Rs19.1bn for its quarter ending in September. But it posted a widening loss before tax of Rs5.6bn, compared with Rs4.7bn a year ago.

Its share price has recovered slightly from lows of around Rs440 in November to above Rs540 this month.

Some financiers believe the buyback reflects Paytm's confidence that the company is going to generate free cash flow within the next 12 to 18 months.

Financials. Alternative assets

Apollo chief defends push to retail investors

Gated product for the wealthy is aimed at matching S&P 500 returns but with less volatility

SUJEET INDAP — LOS ANGELES

After Blackstone's retail-focused credit and retail funds were hit by a wave of redemption requests, rival Apollo is facing scrutiny over its own plans to target wealthy individuals.

Apollo co-founder and chief executive Marc Rowan is defending his firm's drive to offer private capital products to rich clients as it rolls out a gated product that it says can match the returns of the S&P 500 but with less volatility.

"I actually think it's good for the industry right now," Rowan told a Goldman Sachs investor conference last week, as questions emerged about the suitability of alternative investments for retail investors after Blackstone restricted withdrawals from a $69bn property fund. "We are going to train clients and advisers to think about how much liquidity they need and how much they're prepared to stock away."

Rowan's comments come days after Blackstone's decision tarnished what had been the biggest engine of asset and fee growth inside the largest alternative asset manager, and raised questions about the wider push by private equity to court individuals with high net worth.

A wealth management executive at a Wall Street bank said private equity groups "never wanted retail. Retail was not smart money. Now they are knocking on our door," noting that Blackstone's success had led to several copycats.

Apollo, which manages more than $500bn, is rolling out Apollo Aligned Alternatives, a vehicle that it says can replicate the annual 10-12 per cent returns of the S&P 500 but with less volatility, justifying its high fees relative to index funds from the likes of Vanguard that charge just a few basis points.

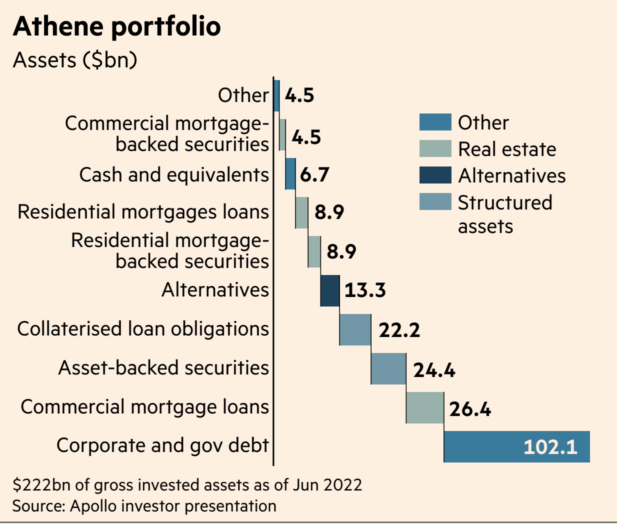
Rowan said earlier this year: "I truly believe this could be the single biggest product inside the Apollo family in the not too distant future."

Apollo's AAA is one of dozens of customised products that private capital managers pitch to well-heeled retail buyers who want to diversify from public market exposure. Apollo has said it hopes to raise $50bn from retail channels through 2026 for funds ranging from AAA to real estate and corporate debt funds.

Groups such as Apollo, Blackstone, Ares, KKR and Blue Owl increasingly concede that their traditional offerings for pensions and sovereign wealth funds will not be enough to reach their aspirations to manage trillions of dollars. At the same time, high net worth individuals have been clamouring for access to alternative assets whose high returns had until recently not been readily available to them.

Apollo chief Marc Rowan says the firm's latest plans will be 'good for the industry"
Jeenah Moon/Bloomberg

While the S&P 500 tracks the biggest listed US companies, Apollo's AAA is to be backed by nearly 200 investments made by Apollo's retirement annuities merchant, Athene. Apollo profits from spread earnings, where it invests premiums more creatively to capture the difference between promises to customers and investment returns. A small fraction of these investments have included ownership stakes in various Athene vehicles that, for example, lend to mid-sized businesses or to fund the purchase of heavy equipment or aircraft.



While most of Athene's investment portfolio has been in senior debt securities, this equity portfolio has returned over the past decade on average between 10 per cent and 12 per cent annually, a record that makes it "fundamentally a replacement for S&P core equity holdings within an investor's allocation", according to Rowan.

Apollo has said that the net asset value of Athene's equity portfolio is up 11 per cent this year even as the S&P 500 fell more than 15 per cent.

Private capital titans insist that the traditional 60/40 investor allocation between listed stocks and bonds has been rendered useless by central bank largesse correlating the entire market. This dilemma opened up the opportunity for private assets whose returns are presented as a hedge against public market gyrations. Private equity firms have themselves become far more diversified, moving deeply into corporate credit and real estate, with those areas often becoming the basis of these new retail products.

> Private equity groups 'never wanted retail. Retail was not smart money. Now they are knocking on our door'

Blackstone — whose property and corporate debt funds, Breit and BCRED, manage nearly $200bn in gross assets — remains by far the leader in private capital retail offerings. Retail funds across private capital managers have similar pitches: dividends will be healthy but redemptions will be limited to 5 per cent of total assets per quarter as the source of long-term investment gains stems from a premium for holding illiquidity.

Apollo says its AAA product already has $5bn in institutional commitments from backers including Japanese bank SuMi Trust. Apollo and Athene have $10bn committed to AAA.

Rowan has previously acknowledged that the retail products on offer have yet to prove themselves in a real market storm, something analysts agree with.

"These businesses are experiencing what we would characterise as its first real-life stress test," wrote Brian McKenna in a research note to his clients at JMP Securities this week.

Financial services

KPMG advisory unit drives 8% rise in sales

MICHAEL O'DWYER — LONDON
STEPHEN FOLEY — NEW YORK

KPMG grew more slowly than its Big Four rivals in its most recent financial year, with its advisory arm the main driver of an 8 per cent increase in sales.

Revenues in the advisory unit rose 13 per cent year on year to $15.4bn in the 12 months to the end of September, fuelled by work on deals and technology consulting, which increased by one-fifth as companies sought help transforming operations and using cloud computing.

The accounting and professional services firm reported revenues of $34.6bn in results that underlined the reliance of the Big Four; Deloitte, EY, PwC and KPMG, on their advisory arms.

Bill Thomas, global chair and chief executive, rejected an EY-style break-up of KPMG's audit and consulting units, saying the result "validates an unwavering commitment to deliver services . . . via a multidisciplinary approach".

The results pushed the Big Four's total global revenues in their most recent full financial year to a record $190bn from $167bn last year. The firms continue to grow rapidly despite recent scandals.

KPMG has been fined by regulators this year over professional test cheating in the UK and Colombia; misleading US and UK regulators during audit inspections; and outsourcing to unregulated companies in Romania and Poland.

Its United Arab Emirates business was also hit by partner infighting over poor governance and accusations that global bosses had turned a blind eye to whistleblower reports. The firm has said it takes such reports seriously and takes appropriate action.

Francine McKenna, lecturer at the University of Pennsylvania's Wharton School, said it was notable that wrongdoing had continued even after a scandal in which three former KPMG partners were charged with fraud for using information stolen from the US accounting regulator to help improve their scores on audit inspections.

"What is a deterrent for these firms and their professionals? Is it fines? No. Is it action against individuals? No. Seemingly, whatever the news is, KPMG continues to hold on to clients, to have good revenues and to pay partners well," she said.

Paul Lee, a member of the UK's 2019 Brydon review of the audit sector and head of stewardship at investment consultancy Redington, said: "It's a sign of the wider dysfunction in the audit market, and the perceived paucity of alternative providers, that companies don't feel able to avoid hiring firms that have suffered scandals and problems."

KPMG said it had "a relentless focus on quality that underpins our commitment to serve the public interest [and] drives our ambition to be the most trusted . . . professional services organisation". It added it was investing in improving audit quality and technology.

Financials

Family offices trigger Singapore hiring spree

MERCEDES RUEHL AND LEO LEWIS
SINGAPORE

A boom in mainland Chinese family offices setting up in Singapore is drawing in thousands of financial professionals, including from global investment banks, creating what some finance heads are calling a new "hedge fund" industry in the city-state.

Wealthy people moving assets out of Xi Jinping's China account for up to half of a rise in Singapore-based single family offices — private wealth management firms set up for rich individuals and their relatives. Numbers have risen nearly threefold since the pandemic began and, according to some estimates, total as much as 1,500.

"The large family offices are trying to offer the kind of salary senior wealth professionals at private banks are paid," said Caroline Lee, a former private banker who manages a Singapore-based single family office for a group of Chinese clients. "A lot [depends] on the individual bankers, but it might appeal to people who feel there is too much politics at a big bank."

Founders of the family offices often used the structure to secure employment visas and move their families to the city-state, recruitment professionals said. Many would historically employ family members in important positions, whether or not they had previous experience in asset management. But since April this year, Singapore-based family offices have been required to hire at least two investment professionals to qualify for tax exemptions.

Wealthy people are shifting assets out of Xi's China to the city-state

The rules have created the incentive for a collective hiring spree of thousands of asset management, private wealth management and other banking professionals. This would make it a "lot tougher" to find talent, Lee said. "They must be willing to pay."

A Singapore-based investment banking head for a US financial institution said he had lost a number of professionals to family offices. "I know of several other [banks] where they have lost someone senior and that person has gone straight to a family office. We are probably going to see more of them taking whole teams with them."

Bankers said that although the family offices were conservative, their risk appetite was likely to rise. Increasingly they were expected to behave like hedge funds, one said.

COMPANIES & MARKETS

End of 'fantasy' stock valuations brings year of bumper earnings for short selling hedge funds

Perseverance during bull run pays off but new trades may be hard to find in 2023 despite help from higher interest rates

LAURENCE FLETCHER — LONDON

New York-listed tech ventures boomed during the final years of the bull market, providing opportunities for patient short sellers — Michael M. Santiago/Getty Images

Short sellers have had plenty to be grateful for in 2022 — falling stocks, the abrupt end of easy money and a historic energy crisis.

The combination has catapulted short selling hedge funds, which profit from a fall in the price of a stock, centre stage, ending the largely barren run they endured in the more than decade-long bull market.

Renaud Saleur, a former trader at Soros Fund Management who now runs Geneva-based hedge fund Anaconda Invest, has relished a year he could hardly have scripted better.

He points to the opportunities thrown up by the final, wild years of the bull market, when lossmaking tech companies were lionised, Spacs boomed and the hunt for returns often veered into the reckless.

"Things were so much in fantasy, now they're less in fantasy," said Saleur, whose long-short energy hedge fund is up 48 per cent this year, and has profited from bets against UK hydrogen energy group ITM Power and Danish wind turbine maker Vestas.

One of the hedge fund industry's best-known and most criticised strategies, short selling hit high notes before the bull market, notably during the collapse of banks such as Northern Rock during the financial crisis and the demise of technology stocks in the dotcom bust just over 20 years ago.

The prospect of another golden period has emboldened short sellers to launch a string of funds. Daniel Yu and Cyrus de Weck, who founded Gotham City Research and Portsea Asset Management respectively, recently joined forces to set up a hedge fund.

Jim Chanos, best known for correctly predicting the collapse of energy group Enron 20 years ago, is running a new fund for European investors, while Martin Stapleton, a respected short seller who previously worked at Gladstone, has raised money for a new fund, Perbak Capital.

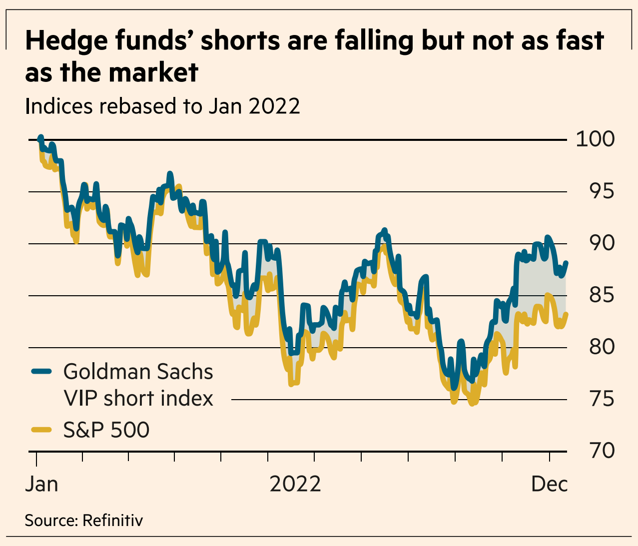
At the same time, others are finally seeing their perseverance pay off.

"Recently we've been getting more absolute return from the short book," said Chris Crawford, who runs a long-short hedge fund for Eric Sturdza Investments. "The reality is setting in for these companies," he said, referring to unprofitable groups that investors rushed into during the bull market.

Higher interest rates have ratcheted up the pressure on companies whose business models rely on access to cheap debt, while they also make the projected future cash flows of high-growth but unprofitable tech companies less attractive.

As well as exposing the fragility of companies with a seductive narrative but no earnings, the seismic shift in interest rates has aided short sellers in other ways.

Short sellers, who borrow shares that they then sell in the market, hold cash with their broker until they close a trade, ideally by buying back the shares at a cheaper price. Higher rates now mean that the interest earned on that cash outstrips the cost of borrowing the shares, according to Goldman Sachs, earning them a tidy profit even before any gains on the particular bet itself.



The chilling effect of the falling stock market on retail investors, particularly those who raced into so-called meme stocks, has also been a boon.

Some managers such as D1's Daniel Sundheim considered reducing short positions after suffering big losses in last year's GameStop fiasco, while some switched from single stock bets to wagers against an index to curb losses. But now many feel more confident to bet against individual stocks again, say industry insiders, knowing they are less likely to be targeted by retail investors.

James Hanbury, a fund manager at Odey Asset Management, told investors, in documentation seen by the Financial Times, that this year had been by far his fund's best since its launch in 2009 for making money on shorts. They include former meme stock AMC Entertainment and a proxy for Cathie Wood's Ark Innovation fund.

> 'Eighty per cent of the time, shorting does not work; 20% of the time, if you're good at it, it does'

Many short sellers suffered in the so-called everything rally during the coronavirus pandemic, when central banks unleashed more stimulus.

While this year's 17 per cent drop in the S&P 500 and 30 per cent fall in the Nasdaq has proved a welcome relief, a declining stock market still carries dangers for short sellers whose pitch to investors rests on their ability to identify the weakest companies.

After the golden opportunity presented by the collapse in highly priced speculative stocks this year — Goldman Sachs's non-profitable technology index is down 60 per cent in 2022 — finding new short trades has become tougher.

Jacob Mitchell, founder of Antipodes Partners, which manages about $7bn in assets, said his fund enjoyed its best six-month period for short selling profits in the first half of this year since launching seven-and-a-half years ago. "The shorts that worked kept on working," he said.

But he added: "Now, it's not as obvious. You can't say 'this is a slam-dunk short'."

Managers have also had to contend with vicious bear market rallies, which can shake them out of their positions. The Nasdaq rebounded 23 per cent from mid-June to mid-August and gained 8 per cent in a week in early November.

"For the first time since this bear market began, [the] most shorted [European] names are having a proper rally and are causing major discomfort in short cash books," Morgan Stanley's investment bank said in a note to clients in early November seen by the Financial Times.

"You have to have nerves and be able to hold the position because the short covering is very fierce," said Anaconda's Saleur, referring to when short sellers scramble to buy back shares during a rally to limit losses.

While many stocks have fallen this year, their moves have increasingly become correlated with the S&P 500, meaning managers are more exposed to overall index level moves. Correlation between the S&P 500 and its member stocks has risen sharply this year, according to Bloomberg data. That has often made life difficult for funds running so-called pairs trades — a bet on one stock rising matched with a bet on another falling, often in the same sector.

Hedge fund Sandbar recently wrote to investors to highlight "how broad-based and one-directional moves have been in markets on so many days this year", which has been "unhelpful" for funds trading pairs.

That has all served to erode short sellers' profits in the bear market. While the Goldman Sachs Hedge Fund Short VIP index of funds' favoured short ideas is down 11 per cent this year, yielding gains for managers, that is less than the fall in the S&P index, indicating funds did not pick the best stocks to bet against.

BlackRock star manager Alister Hibbert, one of the top-performing long-short traders, shifted his fund this year to be positioned for falling stocks but has still lost around 12.7 per cent in the period, according to people familiar with the numbers.

Eric Sturdza's Crawford said he had recently been holding his positions for a shorter period as a way of coping with market volatility.

"Eighty per cent of the time, shorting does not work," he said. "Twenty per cent of the time, if you're good at it, it does."

With plenty forecasting that 2023 will be another lacklustre one for stock markets, short sellers will be under pressure to prove they can emerge as one of the few winners.

Additional reporting by Dan McCrum

Aerospace & defence

Boost for Boeing as United orders 100 wide-body jets

CLAIRE BUSHEY — CHICAGO

United Airlines has ordered 100 wide-body jets from Boeing, updating the carrier's fleet while giving the US aerospace manufacturer a needed win over its European arch-rival.

Chicago-based United said that the order of 787 Dreamliners was the largest order for wide-body planes ever placed by a US carrier, in a deal that gave it the option to increase the purchase to 200 jets.

Wide-body jets fly longer routes than smaller, cheaper single-aisle planes.

The aircraft will replace the Boeing 767s and 777s that United flies, improving fuel efficiency 25 per cent through better engines and greater use of lightweight composite materials.

United will receive the first jets in 2024 and take delivery through to 2032.

"The economics of these planes are unmatched," said Andrew Nocella, United's chief commercial officer. "Every time we replace one of these we make more money."

The order is a boost for Boeing over Airbus. The European company has seized share since 2019, when Boeing's 737 Max was grounded for 20 months after two fatal crashes. Problems in manufacturing the 787 later forced Boeing to halt deliveries of the plane for all but two months between October 2020 and last August.

Air travel rebounded this year, allowing US carriers to raise fares. Yet snags in the supply chain have prevented Boeing and Airbus from satisfying demand.

Airlines began placing larger orders last year as they projected an increase in demand, rushing to secure a slot in manufacturers' order books. Supply chain constraints have slowed the pace of deliveries from Boeing and Airbus.

United ordered 270 jets in June 21, while investor Bill Franke ordered 255 in November 2021 to spread across several ultra-low-cost airlines where he holds a stake. This year Airbus sold nearly 300 aircraft to four Chinese carriers, including 96 A320neo planes to China Southern.

> The 787 Dreamliners, with better engines and lighter materials, will mean a 25% increase in fuel efficiency

Boeing's order backlog for widebody aircraft from the start of the year to October exceeds that of Airbus: 1,046 to 625. Yet the popularity of Airbus's single-aisle offering, the A320 group, means the European maker still has more orders overall, with a backlog of 7,397 to 4,441.

Boeing lists the price for a single 787 as between $248mn and $338mn, depending on the number of seats, but airlines routinely receive discounts that can equal half the amount that manufacturers advertised.

Financials

Former CNN president joins RedBird to launch $1bn fund

JAMES FONTANELLA-KHAN — BRUSSELS
ANNA NICOLAOU — NEW YORK
ALEX BARKER — LONDON

Jeff Zucker, the former president of CNN, has joined US private equity group RedBird and International Media Investments to launch a $1bn sports, media and entertainment fund.

The move to RedBird marks a comeback for Zucker 11 months after he was forced to quit his job at the US cable news network because of his failure to report a romantic relationship with a subordinate.

"I've spent 35 years running media businesses . . . That experience has given me unparalleled perspective for this unique time in media," said Zucker.

RedBird, founded about eight years ago by former Goldman Sachs banker Gerry Cardinale, has a record of partnering with athletes, entertainers and media executives to invest across sectors. The buyout group, which is based in New York and manages about $7bn, recently acquired AC Milan football club from Elliott Management for $1.2bn.

The buyout group acquired AC Milan football club from Elliott for $1.2bn

Cardinale's firm has also invested in a company controlled by NBA basketball star LeBron James, acquired an NFL rival league XFL with movie star Dwayne "The Rock" Johnson, and holds stakes in the company that owns the Red Sox baseball team and Liverpool Football Club.

"With Jeff as our CEO, this platform will integrate substantial operating expertise with sophisticated financial and investing acumen to deploy transformational capital on a scaled basis," said Cardinale.

Zucker became one of the pre-eminent figures in US television during his three-decade career that began as a producer and then chief executive of NBCUniversal. He joined CNN in 2013 and made a lasting impression with a hands-on management style, which was credited with lifting the network's ratings as it entered the Trump era.

During his time at WarnerMedia, Zucker was also responsible for Turner Sports, including overseeing negotiations for Major League Baseball and the National Basketball Association. Zucker began his career at NBC as a researcher for NBC Sports during its coverage of the Seoul Olympic Games in 1988.

He resigned this year after he failed to disclose a romantic relationship with Allison Gollust, CNN's executive vice-president and chief marketing officer.

Technology

Amazon delays start dates for some university graduate hires

DAVE LEE — SAN FRANCISCO

Amazon has delayed the start dates for some university graduates who had been set to the join the company in May.

The business blamed the "macroeconomic environment" and told students that they would now not be able to begin until the end of 2023.

According to an email seen by the Financial Times, a one-off payment of $13,000 has been offered to those affected, regardless of whether or not they decide to still join the company.

"As a part of our annual operating planning review, we look at each part of our business and make adjustments as needed," students were told in an email on Monday, following a phone call to discuss the matter.

The note continued: "You are not the only one being impacted. It is important to know that this is a business decision, not a personal decision."

The student who contacted the FT had been due to start working at Amazon's campus in Sunnyvale, California, home to Lab126, the company's research facility.

Lab126, where the technology behind the Alexa voice assistant is developed, has been a particular focus of Amazon's recent round of cuts, expected to number around 10,000, according to people familiar with the company's plans.

"It's not surprising," said the person, who had recently interned at the company. They asked not to be named as they were now looking for an alternative job.

"There's definitely quite a bit of optimisation to be done. They're not the most automated company in terms of what they do day to day."

They added: "It's a bummer, but life happens."

Amazon declined to disclose precisely how many of its graduate hires would be affected.

"In light of the challenging economic conditions, we're delaying the start dates for some of our college hires by up to six months," said Brad Glasser, an Amazon spokesman. "We're offering assistance to help address any financial impact.

"Amazon remains committed to university recruiting and our internship program as important pathways to find the next generation of leaders and builders."

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Debt risk. Projections

Defaults on US junk loans to surge as rate rises bite

The Federal Reserve has raised rates sharply and in quick succession this year
Joshua Roberts/Reuters

Fed's fight to tame inflation expected to deliver a two-year hit to leveraged borrowing

HARRIET CLARFELT — NEW YORK

The Federal Reserve's most aggressive pace of interest rate rises in decades is set to trigger a surge of defaults over the next two years in the $1.4tn market for risky corporate loans, according to Wall Street banks and rating agencies.

Analysts are forecasting that defaults will at least double from today's relatively low 1.6 per cent. But the disparity is stark, with some firms warning clients that anywhere from one in 20 to one in 10 loans could default next year.

Deutsche Bank expects the default rate on leveraged loans in the US to climb to 5.6 per cent next year before rising to 11.3 per cent in 2024. That would leave defaults close to all-time highs set in 2009. Strategists at UBS forecast a default rate for low-grade loans of 9 per cent in 2023 alone.

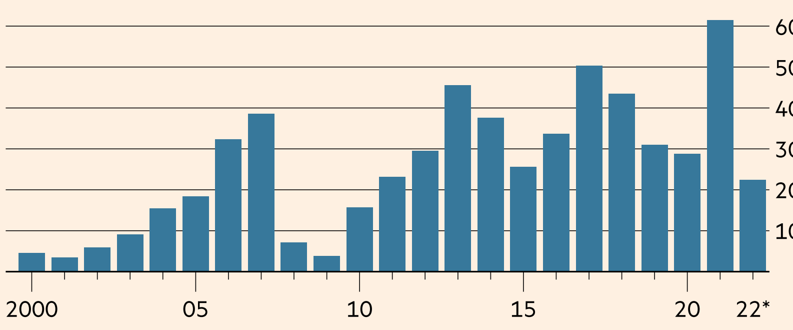
Those predictions come as analysts anticipate that the Fed's efforts to tame inflation through aggressive interest rate rises will pressure junk-rated companies that swelled their debt piles with cheap money during the pandemic.

The floating-rate coupons of leveraged loans made them particularly attractive to issuers when central banks cut borrowing costs to close to zero in response to the Covid crisis, because the loan payments drop when prevailing interest rates fall.

"It's really the US loan market that we think has the most fundamental risk this cycle because that's where the floating rate debt has combined with aggressive releveraging," said Steve Caprio, head of European and US credit strategy at Deutsche Bank Research.

US leveraged loan issuance surged last year

$bn



* Year to date
Source: LCD

Leveraged loans typically finance companies with high debt levels and poor credit ratings and have been a mainstay for private equity firms seeking to fund their buyouts.

New loan sales in the US surged to $615bn in 2021, according to data provider LCD, as companies and buyout firms took advantage of ultra-low interest rates. The figure was the highest annual number since LCD's full-year records began in 2000.

But the Fed has lifted interest rates rapidly this year to a target range of 3.75 to 4 per cent and markets are pricing in expectations of a peak of about 5 per cent next spring.

Fears have intensified that debt issuers most immediately exposed to those rate rises will struggle under the weight of higher borrowing costs, leading some to miss their payments. Compounding the pain, Wall Street banks are broadly anticipating a US recession in 2023 — potentially dealing a blow to corporate earnings just as businesses find it more expensive to reimburse creditors. Leveraged loan issuance has already slowed this year to its most lethargic pace since 2010 — totalling just $225bn up to December 7, according to LCD.

The leveraged loan market was "very sensitive to the Fed tightening", said Matt Mish, head of credit strategy at UBS, "particularly lower-rated credit, because you don't have a lot of these companies that fully hedge the interest rate exposure".

Companies rated at B or CCC, which sit at the lower end of credit agencies' quality spectrum, now account for three-quarters of the leveraged loan market compared with 62 per cent 10 years ago, according to UBS.

Caprio cited the technology and software industries as most at risk. "[Here] you're starting to see multiples decline in the equity markets and you're starting to see some investors question just how sticky these revenues are from that sector."

The bigger fear is that rising defaults spread across other parts of the US debt market. UBS's credit strategy team sees US leveraged loans as "the weakest link in US credit", predicting that credit deterioration for the asset class could have a knock-on impact on appetite from their biggest buyers — via vehicles called collateralised loan obligations.

CLOs make up most of the demand for leveraged loans, packaging these up and selling them on to investors in various risk-categorised tranches.

The definition and scope of defaults from data providers vary, contributing to a range of forecasts.

Analysts at JPMorgan predict a default rate of 3.5 per cent for US leveraged loans in 2023, and expect this to rise to 4 per cent in 2024, assuming a gentle economic slowdown. "The loan product is expected to feel more fundamental headwinds from the immediate transmission of rates and more aggressive capital market trends," they wrote.

Using a narrower interpretation, an index of leveraged loans tracked by Morningstar and trade organisation LSTA could reach a default rate of 2.5 per cent by next September, up from 0.78 per cent in October 2022.

"We see evidence that cushions built up after the 2020 recession are thinning," analysts at S&P Global Ratings wrote in an assessment of the index, "but so far, they still appear to be supporting issuers in the index."

> 'We see evidence cushions built up after the 2020 recession are thinning'

Nick Kraemer, an analyst at S&P Global Ratings, puts the overall default rate for speculative grade US debt at 3.75 per cent by next September. That was lower than the long-term average of 4.1 per cent, he said. Still, S&P's "pessimistic scenario" is for junk-rated US debt to endure a default rate of 6 per cent. "Much will depend on the depth or duration of the recession," it concluded.

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Asset management

Elliott backs its own deal for Nielsen by buying debt

ERIC PLATT AND ANTOINE GARA
NEW YORK

Elliott Management has backed a multibillion-dollar debt package to fund its takeover of television ratings provider Nielsen, helping steer the $16bn acquisition through markets that have grown warier of riskier deals.

The New York-based firm bought the debt with other investors at a discount from Wall Street banks, helping to prop up the deal, according to people familiar with the matter.

The purchase last month comes after it spent $1bn of its capital buying junk bonds tied to its takeover of software maker Citrix Systems, the people said.

Elliott's decision to buy the debt leaves it more exposed to the fortunes of Nielsen, which helps advertisers measure their reach on cable channels and streaming networks. The debt comes on top of the $5.2bn in equity that Elliott, along with Brookfield Asset Management, have injected into the deal.

Credit markets seized up earlier this year, with fears of higher interest rates and the prospect of a recession hitting stocks and bonds. Banks, which agreed to finance dozens of mega-buyouts by private equity firms during more benign conditions, remain on the hook for the cash on the terms they struck when agreeing to underwrite the deals. That has left the banks having to sell the debt packages to investors at steep discounts, given the sharp rise in interest rates. Yields on single-B rated debt have surged from 4.7 per cent at the start of the year to 8.9 per cent, according to ICE Data Services.

> '[It] increases Nielsen's leverage and pressures its cash flow generation due to a high interest burden'

Led by Paul Singer, Elliott draws on one global pool of capital, giving it the flexibility to make equity- and debt-based investments. Its purchase of the bonds tied to Nielsen underlines the group's appetite for junk-rated debt.

It also eased the burden on the deal's underwriters, led by Bank of America, as they have tried to drum up interest in the debt. The banks were forced to use their own cash to fund the takeover in October when the transaction closed.

But in November, they started to offload the debt to investors. The banks completed a $1.96bn bond sale for the deal, selling the debt with a coupon of 9.29 per cent.

A discount on the bonds lifted the yield on the single-B rated notes to 11 per cent, say people briefed on the matter. That was more than 1.5 percentage points higher than the yield available on similarly rated debt.

The $1.96bn of bonds have rallied since they were sold, changing hands on Monday at 97 cents on the dollar. "The take-private transaction increases Nielsen's leverage significantly and pressures its cash flow generation due to the high interest burden," Jawad Hussain, an analyst with S&P Global, said.

Equities

China's zero-Covid policy shift pushes up drugmaker, brewery and funeral stocks

WILLIAM LANGLEY AND CHENG LENG
HONG KONG
EDWARD WHITE — SEOUL

Stocks of Chinese drugmakers, breweries and funeral services have made a comeback, with investors trying to profit from a coronavirus exit wave as the world's most populous country loosens pandemic restrictions.

Over the past week, a clutch of Chinese pharmaceutical companies have been among the top performers on bourses in Hong Kong, Shanghai and Shenzhen.

Amid expectations of booming demand for fever medicine and other drugs, mainland China-listed shares of pharma groups Guangzhou Baiyunshan Pharmaceutical and Hualan Biological Engineering each gained more than 10 per cent over the past five trading days while Shanghai Fosun Pharmaceutical added 7 per cent.

Shijiazhuang Yiling Pharmaceutical, which produces the government-endorsed herbal treatment Lianhua Qingwen, added 11 per cent in the same period. That compares with a 0.3 per cent decline for the CSI 300 index of Shanghai- and Shenzhen-listed shares.

The rally was sparked by President Xi Jinping's move last week to abandon his zero-Covid strategy of mass testing, quarantines, citywide lockdowns and fastidious electronic contact tracing.

The U-turn has led to China's biggest uncontrolled wave of coronavirus cases since infections started in Wuhan, central China, nearly three years ago. The decision has stoked fears of a rise in deaths and hospitalisations, especially among tens of millions of elderly Chinese who have not received the three vaccine doses needed for full protection.

China last week eased mass testing rules for areas affected by Covid

Also attracting investors is Shanghai-based Fu Shou Yuan International, China's biggest funeral services provider and seller of burial plots. The group is up 6 per cent from a week ago and 60 per cent since late October. Before the policy pivot, analysts said the group had been hamstrung for much of the past year. Restrictions on movement meant people were holding on to ashes of loved ones while awaiting a reopening.

Other top performers include low-cost carrier Spring Airlines and national carrier Air China, as well as three breweries and air purifier maker Midea.

Rory Green, an economist at research group TS Lombard, said the end of zero-Covid was "an increasingly crowded trade" and that a better bet might be positioning for the post-Covid economy.

Green added that equity markets were likely to move through three phases, first rallying around immediate policy changes, followed by a weaker period of "risk off" as a Covid exit wave spread and economic activity disappointed. The final phase would be "risk on" returning, as positive sentiment built again over reopening.

Equities

Fewer companies gain top score for environmental disclosures in 2022

CHRIS FLOOD — LONDON

Just 12 companies out of more than 18,700 worldwide merited a "triple A" score for their environmental disclosures in 2022, according to the latest report from a voluntary system widely used by large investors.

This was even fewer than the 14 companies identified the previous year by the non-profit group CDP, formerly known as the Carbon Disclosure Project.

Many companies are struggling to meet the requests for more information as regulators and investors demand improvements in environmental reporting and disclosure standards.

More than 29,500 companies with a combined market value of more than $24.5tn were graded an "F" after failing to provide any data to CDP, which aims to encourage businesses to improve their reporting on environmental risk.

Berkshire Hathaway, Tesla and oil and gas producers Saudi Aramco, ExxonMobil and Chevron are among those companies that did not respond.

"Most companies are still not managing all environmental risks holistically. Far too many are remaining complacent or failing to respond at all," said Dexter Galvin, CDP's global director of corporations and supply chains.

Sasja Beslik, chief investment officer at SDG Impact Japan, a sustainable investment specialist, said the findings showed how little progress had been made in reporting climate change risks.

"Investors are lacking crucial environmental data and so they cannot make fully informed decisions, which leads to a continuing misallocation of capital," said Beslik.

> 'Investors are lacking crucial environmental data and so cannot make fully informed decisions'

More than 680 financial institutions with combined assets of $130tn use CDP scores, according to the group.

Only 330 of the 18,700 companies that responded were granted a single A score from CDP based on their transparency and performance on climate change, water security and deforestation in its seventh annual assessment of environmental and reporting standards.

New entrants to the triple A class were Beiersdorf, the German consumer goods company best known for its Nivea brand; LVMH, the Paris-listed luxury goods supplier; and UPM-Kymmene, the Finnish paper company.

Five companies dropped out of the triple A category: Fuji Oil, the Japanese food ingredient supplier; IFF, the US flavours, fragrances and cosmetics maker; Mondi, the UK paper and packaging group; Symrise, the German aroma chemicals maker; and Unilever, the UK consumer products group.

These failed to make the grade after CDP included more stringent scoring on alignment of corporate plans with the 1.5C Paris accord goal for global warming, as well as verification of deforestation and water data.

Another 59 per cent of the 18,700 companies that did report to CDP were scored as "C" or "D", meaning they were only just beginning to recognise their environmental impact. Two-thirds of the companies that scored between "A-" and "D" showed no improvement in their environmental transparency and action compared with last year.

The day in the markets

What you need to know

- Global stocks climb following cooler than expected US inflation data
- US government bonds rally as Fed expected to cease big rate rises
- European Central Bank also projected to tighten policy less aggressively

Global stocks shot higher yesterday after US consumer price figures showed inflation in the world's biggest economy continued to ease in November, bolstering the Federal Reserve's arguments for a smaller interest rate rise when it concludes its two-day policy meeting today.

Annual consumer price growth in the US slowed to 7.1 per cent in November, down from 7.7 per cent in October and the smallest 12-month increase since December 2021. Month-on-month inflation ticked up 0.1 per cent, less than the 0.3 per cent increase forecast by economists.

Wall Street's benchmark S&P 500 and the tech-heavy Nasdaq Composite both jumped more than 2 per cent immediately after the inflation figures were released but pared gains later in the day to 0.5 per cent and 0.6 per cent, respectively. Europe's Stoxx 600 added 1.3 per cent and London's FTSE 100 rose 0.8 per cent.

The closely followed "core" measure of inflation, which strips out volatile food and energy prices, and is seen as the best indicator for inflation's future trajectory, rose 0.2 per cent in November, after rising 0.3 per cent in October.

The latest figures mean Fed chair Jay Powell is all but certain to raise interest rates by 0.5 percentage points today, ending a run of four consecutive 0.75 percentage point moves. However, analysts cautioned that the central bank still had plenty of work to do to get inflation back down to the 2 per cent target.

US government bonds rallied across the board, with the two-year Treasury yield, which is particularly sensitive to interest rate expectations, dropping 0.18 percentage points to 4.21 per cent as the price of the debt instrument climbed.

The dollar has tumbled since hitting a 20-year high in late September and weakened further against a basket of six peers yesterday, falling 1.2 per cent.

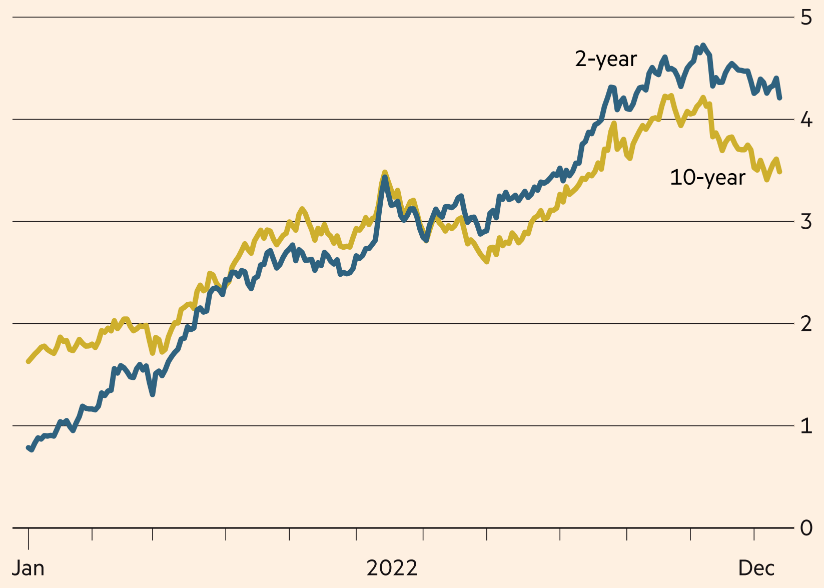
The European Central Bank also meets this week and is expected to tighten monetary policy less aggressively as well, despite mixed economic data. Eurozone core inflation remained at an all-time high of 5 per cent in November.

"The US economy has remained relatively resilient throughout the past year, but that is not the case [in Europe]," said David Dowsett, global head of investments at GAM.

In Asia, Hong Kong's Hang Seng index rose 0.7 per cent, while Japan's Topix added 0.4 per cent. China's CSI 300 fell 0.2 per cent. **George Steer**

US government bonds rally on November inflation data

Treasury yields fall as prices rise (%)



Source: Refinitiv

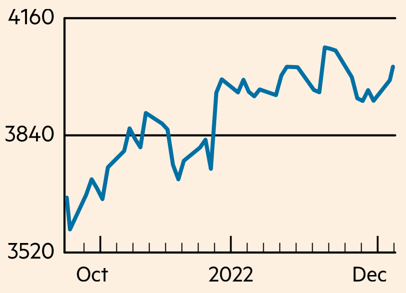
Markets update

	US	Eurozone	Japan	UK	China	Brazil
Stocks	**S&P 500**	**Eurofirst 300**	**Nikkei 225**	**FTSE100**	**Shanghai Comp**	**Bovespa**
Level	4027.50	1746.44	27954.85	7502.89	3176.33	104919.79
% change on day	0.93	1.16	0.40	0.76	-0.09	-0.40
Currency	**$ index (DXY)**	**$ per €**	**Yen per $**	**$ per £**	**Rmb per $**	**Real per $**
Level	104.770	1.064	135.165	1.240	6.981	5.268
% change on day	-0.343	1.141	-1.637	1.224	0.062	-1.499
Govt. bonds	**10-year Treasury**	**10-year Bund**	**10-year JGB**	**10-year Gilt**	**10-year bond**	**10-year bond**
Yield	3.483	1.918	0.250	3.291	2.918	12.749
Basis point change on day	-10.070	-1.800	-0.140	9.700	-0.100	-3.300
World index, Commods	**FTSE All-World**	**Oil - Brent**	**Oil - WTI**	**Gold**	**Silver**	**Metals (LMEX)**
Level	415.92	81.04	75.99	1786.60	23.39	3998.40
% change on day	1.23	3.91	3.85	-0.53	1.21	-1.64

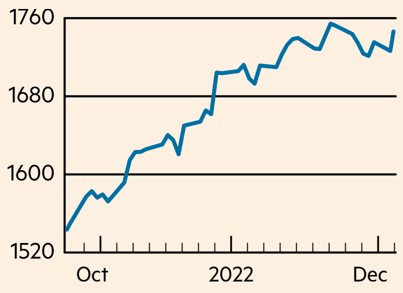
Yesterday's close apart from: Currencies = 16:00 GMT; S&P, Bovespa, All World, Oil = 17:00 GMT; Gold, Silver = London pm fix. Bond data supplied by Tullett Prebon.

Main equity markets

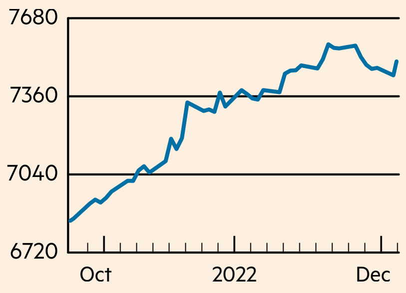
S&P 500 index



Eurofirst 300 index



FTSE 100 index



Biggest movers

%	US		Eurozone		UK	
Ups	Moderna	23.38	Grifols	5.13	Intermediate Capital	5.65
	Halliburton	6.48	Amadeus It	4.46	Ocado	4.57
	Intuit	5.43	Asml Holding	3.73	Antofagasta	4.07
	Meta Platforms	5.30	Tenaris	3.41	Ashtead	3.82
	Epam Systems	5.25	Stmicroelectronics	3.33	Prudential	3.68
Downs	United Airlines	-6.73	Telefonica	-4.91	Rolls-royce Holdings	-2.40
	Trimble	-5.54	Thales	-2.14	Imperial Brands	-1.99
	American Airlines	-5.01	Renault	-1.87	Centrica	-1.84
	Delta Air Lines	-5.00	Adp	-1.74	British American Tobacco	-1.66
	Tesla	-4.89	Sodexo	-1.56	Pearson	-1.49

Prices taken at 17:00 GMT. Based on the constituents of the FTSE Eurofirst 300 Eurozone. All data provided by Morningstar unless otherwise noted.

Wall Street

Promising clinical data from a mid-stage trial sent **Moderna** to the top of the S&P 500 index.

The biotech group said its experimental cancer vaccine, used alongside Merck's immunotherapy drug Keytruda, reduced the risk of death or the recurrence of skin cancer in high-risk patients by 44 per cent compared with using only Keytruda.

Stéphane Bancel, chief executive, said "for the first time, we have demonstrated the potential for mRNA to have an impact on outcomes in a randomised clinical trial in melanoma".

This mRNA knowhow was also behind a surge in **Gritstone bio**. The biotech group said the US Patent and Trademark Office had recently issued two new patents related to its mRNA vaccine platform. One patent covered Gritstone's individualised cancer vaccine candidate Granite.

Arts and crafts retailer **Joann Inc** sank to an all-time low following a chunky earnings miss for its fiscal third quarter.

Photovoltaic cells provider **First Solar** rallied on news it would be joining the S&P 500 index, replacing Fortune Brands Home & Security.

Inclusion in the benchmark means First Solar will now be tracked by a large number of passive investment vehicles. *Ray Douglas*

Europe

A ratings revision helped lift French caterer **Elior Group**, which was upgraded from "neutral" to "buy" by Citi.

The bank said that a potential tie-up with the services business of Derichebourg, Elior's biggest shareholder, could lower the Paris group's leverage.

Contract caterers such as Elior were also "well placed in a downturn", added Citi's analysts, providing it with an opportunity to grow market share.

A new deal propelled Switzerland's **Temenos** higher, with the financial software group announcing it would be working with the international private banking business of an unnamed "US financial institution". Temenos said its wealth management platform would support the lender's transition to a cloud-based core banking system.

Swedish pharma group **Calliditas Therapeutics** rallied after signing an agreement with Viatris Pharmaceuticals to register and commercialise Nefecon in Japan. Calliditas was entitled to $20mn upfront and up to $80mn in development and commercialisation milestones linked to the treatment for a rare type of kidney disease.

Germany's **Lufthansa** leapt after the airline raised its earnings forecast for 2022 off the back of an October and November performance that "exceeded expectations", it said. *Ray Douglas*

London

The prospect of a dilution of investors' shares sent **Morses Club** tumbling. The subprime lender said that, "faced by the ongoing material uncertainty arising from the current complaints situation", it proposed a compensation fund of at least £20mn as part of a scheme of arrangement.

Morses planned to mostly finance this by issuing equity in June 2024, which would "result in existing shareholders being diluted by at least 95 per cent", it said.

Capita rose sharply following the release of a trading update pointing to "light at the end of the tunnel" for the outsourcer, said Shore Capital.

The group said its balance sheet had strengthened, with disposal proceeds totalling £462mn to date and net debt at a "very low level".

A boost to an existing contract sent **WANdisco** rallying, with the data activation platform saying it had signed a follow-on agreement worth $13.2mn with an unnamed "large European automotive components supplier".

This brought the combined contract value with this client to $25.3mn in 2022, and further wins with other customers were expected, said chief executive David Richards. "As a result, our pipeline remains at a record level," he said. *Ray Douglas*

Conditions prevalent for four decades look like they are reversing

Howard Marks

Markets Insight

In my 53 years in the investment world, I've seen economic cycles, pendulum swings, bubbles and crashes, but I remember only two real sea changes. I think we may be in the midst of a third one today.

The first occurred in the 1970s with the creation of high-yield bonds. Prudent bond investing had previously consisted of buying only presumedly safe investment-grade bonds. But investment managers could now prudently buy bonds of almost any quality as long as they were adequately compensated for the attendant risk.

This reflected a new investor mentality. Now risk wasn't necessarily avoided, but rather considered relative to return and hopefully borne intelligently. This new risk/return mindset was critical in the development of many new types of investment, such as private equity, distressed debt, mortgage-backed securities, structured credit and private lending.

It's no exaggeration to say today's investment world bears almost no resemblance to that of 50 years ago.

The next big change was the long-term decline in interest rates. This trend began just a few years after the advent of risk/return thinking, and I believe the combination of the two largely gave rise to the incredible four decades of stock market performance that began in the early 1980s. The S&P 500 index rose from a low of 102 in August 1982 to 4,796 at the beginning of 2022, for a compound annual return of 10.3 per cent per year.

Obviously, many factors gave rise to investors' success over this period, including economic growth in the US, the strong performance of the country's greatest companies, gains in technology, productivity and management techniques and the benefits of globalisation. However, I'd be surprised if 40 years of declining interest rates didn't play the greatest role of all.

This era perhaps reached its apex in the period from 2009 to 2021 (with the exception of a few months in 2020). This was an asset owner's market and a borrower's market.

With the risk-free rate near zero and people eager to make risky investments, it was a frustrating period for lenders and bargain-hunters.

Of course, all of the above flipped in the past year. Most importantly, inflation, which began to rear its head in early 2021, caused the Federal Reserve to kick off one of the quickest rate-rising cycles on record in 2022. As a result, the market characterised by easy money and optimistic borrowers and asset owners disappeared. Suddenly, lenders and buyers held better cards. Credit investors such as Oaktree became better positioned to demand higher returns and stronger creditor protections. The list of loans and bonds trading at distressed levels grew from dozens to hundreds.

> The landscape of easy money and optimistic borrowers and asset owners has disappeared

In short, it looked like a complete reversal of the conditions that prevailed for much of the past 40 years.

The buyers who've driven the S&P 500's 10 per cent rally from the October low have been motivated by a belief that the economy and markets will return to the halcyon days of this previous era. They appear to think that inflation is easing, that the Fed will soon pivot and reduce interest rates and a recession will be averted — or be modest and brief.

Are these beliefs justified?

As I've written many times about the economy and markets, we never know where we're going, but we ought to know where we are.

The bottom line for me is that, in many ways, conditions at this moment are overwhelmingly different from — and mostly less favourable than — those of the post-financial crisis climate. These changes may be long-lasting, or they may wear off over time. But in my view, we're unlikely to see a quick return of the same optimism and ease that marked the period after 2009.

We've gone from the low-return world of 2009-21 to a full-return world. Investors can now get solid returns from credit instruments, meaning they no longer have to rely as heavily on riskier investments to achieve their overall return targets.

Lenders and bargain-hunters face much better prospects in this changed environment than they did in 2009-21. And if you grant that the environment is, and may continue to be, very different from what it was over the past 13 years — and most of the past 40 years — it should follow that the investment strategies that worked best over those periods may not be the ones that outperform in the years ahead. That's the sea change I'm talking about.

Howard Marks is co-founder and co-chair of Oaktree Capital Management and author of 'Mastering the Market Cycle: Getting the Odds on Your Side'

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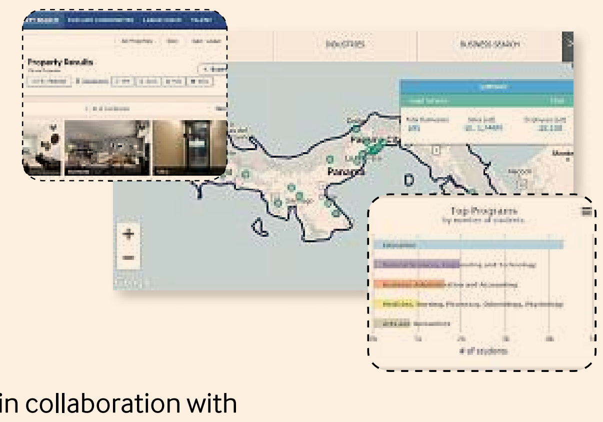

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MARKET DATA

WORLD MARKETS AT A GLANCE
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Change during previous day's trading (%)

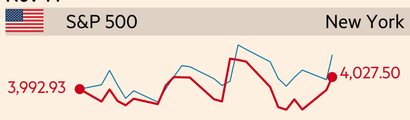
S&P 500	Nasdaq Composite	Dow Jones Ind	FTSE 100	FTSE Eurofirst 300	Nikkei	Hang Seng	FTSE All World $	$ per €	$ per £	¥ per $	£ per €	Oil Brent $ Sep	Gold $
0.93%	1.31%	0.35%	0.76%	1.16%	0.40%	0.68%	1.23%	1.141%	1.224%	-1.637%	-0.116%	0.98%	-0.53%

Stock Market movements over last 30 days, with the FTSE All-World in the same currency as a comparison

AMERICAS

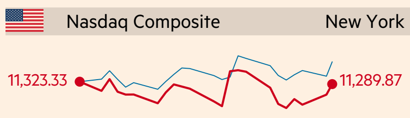
Nov 14 - - Index All World

S&P 500 New York



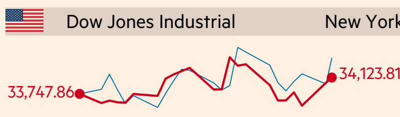
Day ↗0.93% Month ↗0.84% Year ↘-13.76%

Nasdaq Composite New York



Day ↗1.31% Month ↘-0.33% Year ↘-26.77%

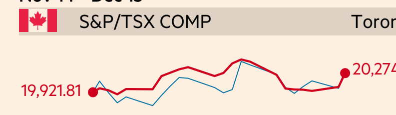
Dow Jones Industrial New York



Day ↗0.35% Month ↗1.02% Year ↘-4.37%

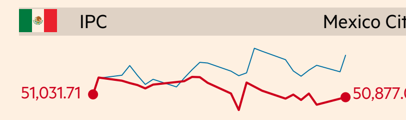
Nov 14 - Dec 13 Index All World

S&P/TSX COMP Toronto



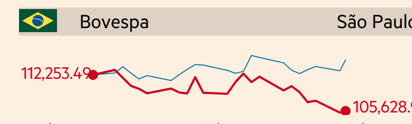
Day ↘-0.04% Month ↘-0.49% Year ↘-3.54%

IPC Mexico City



Day ↗0.51% Month ↘-2.39% Year ↗0.59%

Bovespa São Paulo

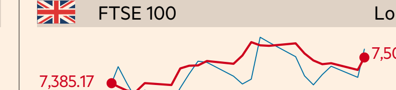


Day ↘-0.40% Month ↘-6.53% Year ↘-2.29%

EUROPE

Nov 14 - Dec 13 Index All World

FTSE 100 London

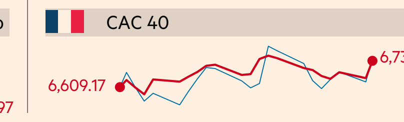


Day ↗0.76% Month ↗2.44% Year ↗3.67%

FTSE Eurofirst 300 Europe

Day ↗1.16% Month ↗2.44% Year ↘-5.01%

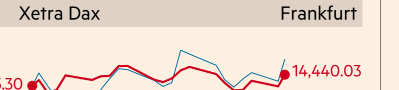
CAC 40 Paris



Day ↗1.42% Month ↗2.28% Year ↘-3.53%

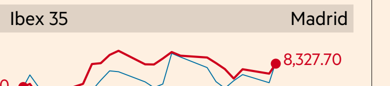
Nov 14 - Dec 13 Index All World

Xetra Dax Frankfurt



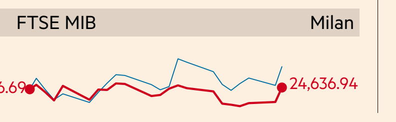
Day ↗0.93% Month ↗1.39% Year ↘-7.69%

Ibex 35 Madrid



Day ↗0.83% Month ↗2.84% Year ↘-0.39%

FTSE MIB Milan

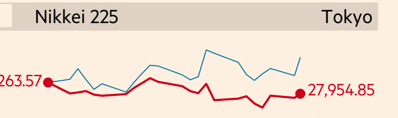


Day ↗1.37% Month ↗3.54% Year ↘-7.86%

ASIA

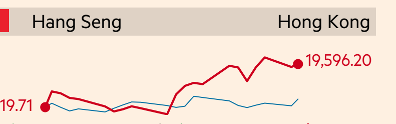
Nov 14 - Dec 13 Index All World

Nikkei 225 Tokyo



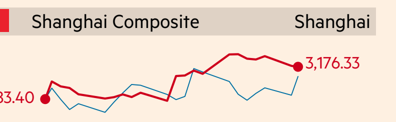
Day ↗0.40% Month ↘-1.02% Year ↘-1.63%

Hang Seng Hong Kong



Day ↗0.68% Month ↗13.01% Year ↘-18.43%

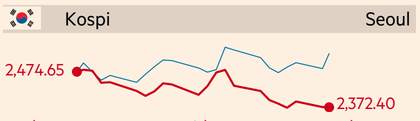
Shanghai Composite Shanghai



Day ↘-0.09% Month ↗3.65% Year ↘-13.37%

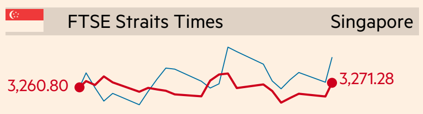
Nov 14 - Dec 13 Index All World

Kospi Seoul



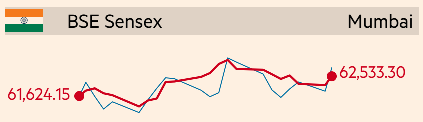
Day ↘-0.03% Month ↘-1.24% Year ↘-21.19%

FTSE Straits Times Singapore



Day ↗0.98% Month ↗1.24% Year ↗4.23%

BSE Sensex Mumbai



Day ↗0.65% Month ↗1.16% Year ↗6.34%

Country	Index	Latest	Previous
Argentina	Merval	166842.17	166301.99
Australia	All Ordinaries	7389.20	7370.60
	S&P/ASX 200	7203.30	7180.80
	S&P/ASX 200 Res	5998.50	6069.00
Austria	ATX	3148.83	3135.43
Belgium	BEL 20	3749.83	3696.17
	BEL Mid	9674.75	9563.69
Brazil	IBovespa	104919.79	105343.33
Canada	S&P/TSX 60	1209.38	1211.90
	S&P/TSX Comp	20011.75	20019.70
	S&P/TSX Div Met & Min	1519.32	1517.81
Chile	S&P/CLX IGPA Gen	28040.99	28035.65
China	FTSE A200	10451.01	10465.02
	FTSE B35	9000.71	8988.96
	Shanghai A	3329.36	3332.19
	Shanghai B	290.15	290.92
	Shanghai Comp	3176.33	3179.04
	Shenzhen A	2145.01	2157.07
	Shenzhen B	1158.91	1156.66
Colombia	COLCAP	1261.61	1260.21
Croatia	CROBEX	2013.05	2011.29

Country	Index	Latest	Previous
Cyprus	CSE M&P Gen	68.46	68.68
Czech Republic	PX	1180.24	1168.10
Denmark	OMXC Copenahgen 20	1796.63	1805.09
Egypt	EGX 30	14787.05	14498.29
Estonia	OMX Tallinn	1806.79	1792.41
Finland	OMX Helsinki General	11038.10	11233.43
France	CAC 40	6744.98	6650.55
	SBF 120	5170.91	5099.24
Germany	M-DAX	25263.08	25627.99
	TecDAX	3028.01	3048.21
	XETRA Dax	14440.03	14306.63
Greece	Athens Gen	920.00	912.94
	FTSE/ASE 20	2230.25	2211.16
Hong Kong	Hang Seng	19596.20	19463.63
	HS China Enterprise	6654.85	6628.30
	HSCC Red Chip	3657.93	3663.81
Hungary	Bux	44928.04	43950.53
India	BSE Sensex	62533.30	62130.57
	Nifty 500	15904.50	15828.00
Indonesia	Jakarta Comp	6810.32	6734.45
Ireland	ISEQ Overall	7265.98	7191.28
Israel	Tel Aviv 125	1881.37	1903.11

Country	Index	Latest	Previous
Italy	FTSE Italia All-Share	26700.12	26333.32
	FTSE Italia Mid Cap	40578.44	39933.98
	FTSE MIB	24636.94	24303.68
Japan	2nd Section	7228.27	7239.06
	Nikkei 225	27954.85	27842.33
	S&P Topix 150	1690.35	1681.94
	Topix	1965.68	1957.33
Jordan	Amman SE	2502.61	2506.93
Kenya	NSE 20	1642.12	1646.41
Kuwait	KSX Market Index	6633.44	6603.51
Latvia	OMX Riga	1150.98	1153.07
Lithuania	OMX Vilnius	958.41	957.63
Luxembourg	LuxX	1490.84	1473.25
Malaysia	FTSE Bursa KLCI	1470.12	1474.38
Mexico	IPC	50723.34	50466.25
Morocco	MASI	11285.68	11285.68
Netherlands	AEX	732.95	720.69
	AEX All Share	1001.47	983.46
New Zealand	NZX 50	11601.42	11506.45
Nigeria	SE All Share	48899.08	48881.93
Norway	Oslo All Share	1017.37	1006.88
Pakistan	KSE 100	41819.29	41539.94

Country	Index	Latest	Previous
Philippines	Manila Comp	6582.38	6585.20
Poland	Wig	57443.80	56515.01
Portugal	PSI 20	5793.05	5770.36
	PSI General	4491.00	4466.30
Romania	BET Index	12107.95	12206.40
Russia	Micex Index	2436.57	2445.30
	RTX	1245.71	1212.57
Saudi-Arabia	TADAWUL All Share Index	10185.14	10444.27
Singapore	FTSE Straits Times	3271.28	3239.66
Slovakia	SAX	340.17	340.17
Slovenia	SBI TOP	-	-
South Africa	FTSE/JSE All Share	75835.45	74422.18
	FTSE/JSE Res 20	74704.77	72852.22
	FTSE/JSE Top 40	69675.69	68277.93
South Korea	Kospi	2372.40	2373.02
	Kospi 200	309.56	309.64
Spain	IBEX 35	8327.70	8258.90
Sri Lanka	CSE All Share	8881.34	8843.75
Sweden	OMX Stockholm 30	2088.43	2111.28
	OMX Stockholm AS	799.43	807.28
Switzerland	SMI Index	11136.62	11033.64

Country	Index	Latest	Previous
Taiwan	Weighted Pr	14522.96	14612.59
Thailand	Bangkok SET	1625.91	1623.13
Turkey	BIST 100	5256.19	5256.19
UAE	Abu Dhabi General Index	9222.93	9251.11
UK	FT 30	2516.60	2488.50
	FTSE 100	7502.89	7445.97
	FTSE 4Good UK	6774.75	6717.58
	FTSE All Share	4105.09	4070.00
	FTSE techMARK 100	6332.21	6277.98
USA	DJ Composite	11388.89	11342.97
	DJ Industrial	34123.81	34005.04
	DJ Transport	14291.73	14180.04
	DJ Utilities	993.49	994.16
	Nasdaq 100	11874.28	11706.44
	Nasdaq Cmp	11289.87	11143.74
	NYSE Comp	15584.91	15468.67
	S&P 500	4027.50	3990.56
	Wilshire 5000	39915.28	39568.92
Venezuela	IBC	16462.52	15989.25
Vietnam	VNI	1041.02	1048.69

Country	Index	Latest	Previous
Cross-Border	DJ Global Titans ($)	427.75	422.80
	Euro Stoxx 50 (Eur)	3981.69	3921.82
	Euronext 100 ID	1289.30	1269.15
	FTSE 4Good Global ($)	9931.39	9796.98
	FTSE All World ($)	415.92	410.87
	FTSE E300	1746.44	1726.38
	FTSE Eurotop 100	3446.91	3406.06
	FTSE Global 100 ($)	2561.80	2525.56
	FTSE Gold Min ($)	1711.47	1731.84
	FTSE Latibex Top (Eur)	4440.00	4432.20
	FTSE Multinationals ($)	2678.81	2659.88
	FTSE World ($)	754.58	744.95
	FTSEurofirst 100 (Eur)	4648.64	4596.96
	FTSEurofirst 80 (Eur)	5409.99	5324.76
	MSCI ACWI Fr ($)	622.59	619.36
	MSCI All World ($)	2683.56	2662.86
	MSCI Europe (Eur)	1756.39	1764.12
	MSCI Pacific ($)	2630.44	2653.75
	S&P Euro (Eur)	1781.49	1755.22
	S&P Europe 350 (Eur)	1791.79	1769.50
	S&P Global 1200 ($)	3003.80	2967.00
	Stoxx 50 (Eur)	3798.33	3760.53

(c) Closed. (u) Unavaliable. † Correction. ♥ Subject to official recalculation. For more index coverage please see www.ft.com/worldindices. A fuller version of this table is available on the ft.com research data archive.

STOCK MARKET: BIGGEST MOVERS

AMERICA

ACTIVE STOCKS	stock traded m's	close price	Day's change
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
BIGGEST MOVERS	**Close price**	**Day's change**	**Day's chng%**
Ups			
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
Downs			
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

Based on the constituents of the S&P500

LONDON

ACTIVE STOCKS	stock traded m's	close price	Day's change
Glencore	221.6	545.50	8.10
Shell	180.0	2318.00	22.50
Astrazeneca	155.8	11326.00	-24.00
Diageo	133.3	3759.50	31.00
Bp	131.4	471.05	8.95
Rio Tinto	130.3	5747.00	68.00
Unilever	116.8	4105.50	-16.50
British American Tobacco	116.4	3252.50	-55.00
Prudential	109.6	1100.00	39.00
Hsbc Holdings	101.8	500.10	3.75
BIGGEST MOVERS	**Close price**	**Day's change**	**Day's chng%**
Ups			
Synthomer	132.70	15.30	13.03
Molten Ventures	398.60	29.80	8.08
Aston Martin Lagonda Global Holdings	162.35	9.15	5.97
Hg Capital Trust	360.00	20.00	5.88
Intermediate Capital	1235.00	66.00	5.65
Downs			
Volution	350.50	-32.50	-8.49
Moonpig	119.40	-4.60	-3.71
Easyjet	369.80	-10.00	-2.63
Rolls-royce Holdings	90.61	-2.23	-2.40
Imperial Brands	2020.00	-41.00	-1.99

Based on the constituents of the FTSE 350 index

EURO MARKETS

ACTIVE STOCKS	stock traded m's	close price	Day's change
Asml Holding	429.5	590.30	21.20
Novartis N	391.0	86.04	-0.13
Nestle N	370.6	111.16	0.06
Roche Gs	354.8	311.74	4.31
Iberdrola	258.9	11.00	0.00
Unicredit	230.3	12.87	0.17
Totalenergies	205.4	57.80	1.18
Intesa Sanpaolo	192.3	2.10	0.03
Enel	188.4	5.25	0.05
Lvmh	165.8	724.60	8.40
BIGGEST MOVERS	**Close price**	**Day's change**	**Day's chng%**
Ups			
Amadeus It	53.44	2.28	4.46
Prosus	66.46	2.55	3.99
Asml Holding	590.30	21.20	3.73
Adyen	1489.60	49.40	3.43
Dassault Systemes	36.49	1.08	3.05
Downs			
Telefonica	3.29	-0.17	-4.91
Cs N	3.11	-0.02	-0.62
Zurich Insurance N	454.54	-2.54	-0.56
Heineken	89.68	-0.24	-0.27
Orange	9.24	-0.02	-0.25

Based on the constituents of the FTSEurofirst 300 Eurozone index

TOKYO

ACTIVE STOCKS	stock traded m's	close price	Day's change
Softbank .	608.7	6213.00	8.00
Tokyo Electron	493.4	45290.00	40.00
Nippon Yusen Kabushiki Kaisha	388.6	3143.00	67.00
Fast Retailing Co.,	375.8	85180.00	1280.00
Takeda Pharmaceutical	334.4	4160.00	109.00
Sony	320.9	10990.00	115.00
Toyota Motor	306.9	1968.50	5.50
Mitsubishi Ufj Fin,.	283.1	758.00	2.50
Shionogi & Co.,	253.1	6973.00	110.00
Keyence	239.6	56630.00	680.00
BIGGEST MOVERS	**Close price**	**Day's change**	**Day's chng%**
Ups			
Jgc	1786.00	56.00	3.24
Fujifilm Holdings	7212.00	194.00	2.76
Takeda Pharmaceutical	4160.00	109.00	2.69
Sojitz	2535.00	65.00	2.63
Mitsubishi Motors	604.00	13.00	2.20
Downs			
Yokohama Rubber Co Ltd	2152.00	-68.00	-3.06
Sharp	1014.00	-27.00	-2.59
Unitika	247.00	-6.00	-2.37
Nexon Co.,	2983.00	-47.00	-1.55
Dowa Holdings Co.,	4320.00	-60.00	-1.37

Based on the constituents of the Nikkei 225 index

UK MARKET WINNERS AND LOSERS

FTSE 100	Dec 13 price(p)	%Chg week	%Chg ytd
Winners			
Haleon	319.20	8.1	-
Ocado	700.00	5.7	-
Dechra Pharmaceuticals	2828.00	5.5	-
Hargreaves Lansdown	885.40	5.5	-
Smith (ds)	324.80	5.1	-
Smith & Nephew	1125.00	4.9	-
Intercontinental Hotels	4986.00	4.9	4.1
Gsk	1452.40	4.7	-
Entain	1414.00	4.5	-
Smurfit Kappa	3095.00	3.9	-
Convatec	234.80	3.6	23.7
Melrose Industries	130.65	3.6	-16.7
Losers			
Frasers	759.00	-14.2	-2.4
Bt	113.90	-5.3	-32.5
British American Tobacco	3252.50	-4.9	19.5
Centrica	90.52	-4.4	26.8
Imperial Brands	2020.00	-4.2	25.0
Anglo American	3205.00	-3.6	5.9
Dcc	4262.00	-3.3	-
Airtel Africa	117.40	-3.2	-
Vodafone	86.49	-3.1	-
London Stock Exchange	7608.00	-3.1	9.3
Rolls-royce Holdings	90.61	-3.1	-
Wpp	831.20	-3.1	-

FTSE 250	Dec 13 price(p)	%Chg week	%Chg ytd
Winners			
Aston Martin Lagonda Global Holdings	162.35	23.2	-66.3
Redde Northgate	420.00	12.4	-4.2
Paragon Banking	528.00	8.6	-7.1
Indivior	1794.00	7.3	40.2
Hipgnosis Songs Fund	86.70	7.0	-
Auction Technology	785.00	6.8	-
Ashmore	234.60	6.6	-
Elementis	117.20	6.1	-
Fdm (holdings)	788.00	5.2	-38.4
Wizz Air Holdings	2410.00	5.0	-
Integrafin Holdings	307.60	5.0	-
Apax Global Alpha	190.00	4.9	-
Losers			
Home Reit	39.15	-23.2	-
Moonpig	119.40	-21.0	-
Tullow Oil	36.40	-10.1	-
Asos	568.00	-7.5	-
Dr. Martens	189.10	-7.4	-
Future	1295.00	-7.3	-66.6
Genuit	294.00	-7.0	-
Network Int Holdings	307.80	-7.0	5.0
Serco	157.90	-6.8	15.5
Currys	66.85	-6.8	-
Darktrace	304.30	-6.1	-
Videndum	1118.00	-6.1	-

FTSE SmallCap	Dec 13 price(p)	%Chg week	%Chg ytd
Winners			
Porvair	668.00	26.5	-8.5
Metro Bank	116.20	18.6	21.9
On The Beach	141.20	12.2	-
Stv	282.00	11.0	-
Capital & Regional	56.10	10.2	-4.9
Saga	114.20	8.9	-
Atrato Onsite Energy	91.40	7.4	-
Capita	25.00	6.3	-
Macfarlane	107.00	5.4	-
Chrysalis Investments	81.00	5.2	-
Lsl Property Services	250.00	5.0	-
Petra Diamonds	98.00	4.8	37.1
Losers			
Pendragon	18.90	-33.2	-16.0
Procook	27.10	-20.3	-
Funding Circle Holdings	50.70	-14.5	-
Middlefield Canadian ome Pcc	113.25	-9.2	-4.2
Rank	83.10	-8.7	-
Norcros	176.00	-6.9	-
Fuller, Smith & Turner	512.00	-6.6	-
Newriver Reit	77.60	-5.7	-
Aptitude Software	349.00	-5.7	-
Aberforth Split Level ome Trust	67.40	-5.1	-
Pollen Street	570.00	-5.0	-
Pharos Energy	24.80	-5.0	-0.8

Industry Sectors	Dec 13 price(p)	%Chg week	%Chg ytd
Winners			
Automobiles & Parts	1501.18	13.4	-58.8
Pharmaceuticals & Biotech.	21191.41	2.6	12.8
Travel & Leisure	6648.43	1.6	-13.1
General Industrials	6240.46	1.5	-
Life Insurance	7030.58	1.2	-8.2
Electronic & Electrical Equip.	9175.96	1.1	-
Construction & Materials	6799.72	0.8	-
Nonlife Insurance	3210.46	0.6	-2.3
Software & Computer Services	1862.14	0.5	-
Household Goods	10143.90	0.5	-
Equity Investment Instruments	11405.47	0.5	-
Banks	3243.67	0.5	6.3
Losers			
Tobacco	35212.52	-4.4	20.6
Mobile Telecommunications	2190.77	-4.0	-
General Financial	12202.27	-2.3	5.6
Food & Drug Retailers	4102.40	-1.7	-6.3
Beverages	28650.22	-1.6	-7.8
Oil & Gas Producers	8084.53	-1.4	41.1
Industrial Metals	7742.27	-1.3	21.5
Aerospace & Defense	4950.63	-1.2	18.4
Personal Goods	32722.74	-1.0	-9.1
Food Producers	5787.08	-1.0	-
Gas Water & Multiutilities index	5753.54	-0.8	-3.5
Health Care Equip.& Services	10814.30	-0.6	31.1

Based on last week's performance. †Price at suspension.

CURRENCIES

Dec 13	Currency	DOLLAR Closing Mid	DOLLAR Day's Change	EURO Closing Mid	EURO Day's Change	POUND Closing Mid	POUND Day's Change
Argentina	Argentine Peso	171.7650	0.3051	182.7326	2.3302	212.9283	2.8393
Australia	Australian Dollar	1.4534	-0.0302	1.5462	-0.0148	1.8017	-0.0161
Bahrain	Bahrainin Dinar	0.3770	-	0.4011	0.0044	0.4673	0.0054
Bolivia	Bolivian Boliviano	6.9100	-	7.3512	0.0808	8.5660	0.0992
Brazil	Brazilian Real	5.2677	-0.0802	5.6041	-0.0227	6.5301	-0.0226
Canada	Canadian Dollar	1.3543	-0.0132	1.4408	0.0019	1.6789	0.0032
Chile	Chilean Peso	853.4500	-7.3800	907.9449	2.2180	1057.9785	3.2077
China	Chinese Yuan	6.9807	0.0044	7.4264	0.0862	8.6536	0.1055
Colombia	Colombian Peso	4798.8000	-45.9500	5105.2159	7.7862	5948.8294	12.5788
Costa Rica	Costa Rican Colon	591.9550	1.3950	629.7528	8.3919	733.8164	10.2061
Czech Republic	Czech Koruna	22.8265	-0.2867	24.2840	-0.0346	28.2968	-0.0236
Denmark	Danish Krone	6.9921	-0.0769	7.4386	0.0009	8.6677	0.0061
Egypt	Egyptian Pound	24.6526	0.0309	26.2267	0.3209	30.5606	0.3917
Hong Kong	Hong Kong Dollar	7.7782	0.0021	8.2749	0.0932	9.6422	0.1142
Hungary	Hungarian Forint	384.0768	-11.4942	408.6010	-7.6012	476.1204	-8.5708
India	Indian Rupee	82.8013	0.2625	88.0883	1.2447	102.6445	1.5102
Indonesia	Indonesian Rupiah	15657.0000	29.5000	16656.7559	214.1742	19409.1844	260.8634
Israel	Israeli Shekel	3.4016	-0.0355	3.6188	0.0024	4.2168	0.0053
Japan	Japanese Yen	135.1650	-2.2500	143.7956	-0.7863	167.5571	-0.8168
..One Month		135.1644	-2.2513	143.7954	-0.7868	167.5566	-0.8179
..Three Month		135.1634	-2.2533	143.7948	-0.7879	167.5555	-0.8200
..One Year		135.1583	-2.2637	143.7918	-0.7941	167.5566	-0.8249
Kenya	Kenyan Shilling	122.9000	0.1000	130.7475	1.5428	152.3529	1.8866
Kuwait	Kuwaiti Dinar	0.3062	-0.0009	0.3257	0.0027	0.3795	0.0034
Malaysia	Malaysian Ringgit	4.4290	0.0120	4.7118	0.0644	5.4904	0.0783
Mexico	Mexican Peso	19.6220	-0.2135	20.8749	0.0049	24.3244	0.0201
New Zealand	New Zealand Dollar	1.5406	-0.0277	1.6390	-0.0111	1.9098	-0.0118
Nigeria	Nigerian Naira	443.7500	-	472.0845	5.1906	550.0942	6.3695
Norway	Norwegian Krone	9.7652	-0.2381	10.3888	-0.1362	12.1055	-0.1515
Pakistan	Pakistani Rupee	224.7500	0.2500	239.1008	2.8920	278.6111	3.5324
Peru	Peruvian Nuevo Sol	3.8261	0.0005	4.0704	0.0453	4.7430	0.0555
Philippines	Philippine Peso	55.9150	0.2700	59.4853	0.9381	69.3150	1.1334
Poland	Polish Zloty	4.4095	-0.0530	4.6910	-0.0042	5.4662	-0.0016
Romania	Romanian Leu	4.6334	-0.0523	4.9293	-0.0008	5.7438	0.0024
Russia	Russian Ruble	63.1250	0.2250	67.1557	0.9751	78.2528	1.1818
Saudi Arabia	Saudi Riyal	3.7596	-0.0014	3.9997	0.0425	4.6606	0.0522
Singapore	Singapore Dollar	1.3460	-0.0093	1.4319	0.0060	1.6686	0.0079
South Africa	South African Rand	17.2300	-0.3613	18.3302	-0.1786	21.3592	-0.1953
South Korea	South Korean Won	1306.6000	-0.6500	1390.0297	14.5996	1619.7254	17.9583
Sweden	Swedish Krona	10.2077	-0.1491	10.8594	-0.0374	12.6539	-0.0361
Switzerland	Swiss Franc	0.9265	-0.0099	0.9856	0.0004	1.1485	0.0012
Taiwan	New Taiwan Dollar	30.7225	0.0060	32.6842	0.3657	38.0851	0.4483
Thailand	Thai Baht	34.8075	0.0050	37.0300	0.4124	43.1491	0.5058
Tunisia	Tunisian Dinar	3.1532	-0.0324	3.3545	0.0028	3.9089	0.0056
Turkey	Turkish Lira	18.6465	0.0032	19.8371	0.2215	23.1151	0.2716
United Arab Emirates	UAE Dirham	3.6730	0.0001	3.9075	0.0430	4.5532	0.0528
United Kingdom	Pound Sterling	0.8067	-0.0094	0.8582	-0.0005	-	-
..One Month		0.8068	-0.0094	0.8580	-0.0005	-	-
..Three Month		0.8070	-0.0095	0.8578	-0.0005	-	-
..One Year		0.8073	-0.0096	0.8566	-0.0006	-	-
United States	United States Dollar	-	-	1.0639	0.0117	1.2396	0.0144
..One Month		-	-	1.0635	-0.1614	1.2398	0.0144
..Three Month		-	-	1.0631	-0.1615	1.2400	0.0144
..One Year		-	-	1.0613	-0.1614	1.2403	0.0142
Vietnam	Vietnamese Dong	23640.0000	65.0000	25149.5139	344.9121	29305.3174	418.9449
European Union	Euro	0.9400	-0.0105	-	-	1.1652	0.0007
..One Month		0.9397	-0.0105	-	-	1.1651	0.0007
..Three Month		0.9392	-0.0105	-	-	1.1649	0.0007
..One Year		0.9374	-0.0104	-	-	1.1636	0.0006

Rates are derived from WM Reuters Spot Rates and MorningStar (latest rates at time of production). Some values are rounded. Currency redenominated by 1000. The exchange rates printed in this table are also available at www.FT.com/marketsdata

FTSE ACTUARIES SHARE INDICES
UK SERIES www.ft.com/equities

Produced in conjunction with the Institute and Faculty of Actuaries

	£ Strlg Dec 13	Day's chge%	Euro Index	£ Strlg Dec 12	£ Strlg Dec 09	Year ago	Div yield%	Cover	P/E ratio	X/D adj	Total Return
FTSE 100 (100)	7502.89	0.76	6796.62	7445.97	7476.63	7231.44	3.63	1.63	16.94	266.24	7703.03
FTSE 250 (250)	19086.29	1.42	17289.63	18819.44	18916.00	22647.22	3.17	0.59	53.69	544.66	15884.72
FTSE 250 ex Inv Co (173)	19570.76	1.50	17728.49	19280.65	19406.72	23352.49	3.28	1.28	23.80	579.16	16621.63
FTSE 350 (350)	4145.31	0.86	3755.10	4109.99	4127.52	4130.09	3.56	1.49	18.83	142.83	8445.76
FTSE 350 ex Investment Trusts (270)	4084.39	0.83	3699.91	4050.78	4068.55	4023.32	3.62	1.68	16.46	143.04	4300.75
FTSE 350 Higher Yield (132)	3542.67	0.75	3209.18	3516.16	3532.45	3269.87	5.04	1.72	11.51	164.43	8144.42
FTSE 350 Lower Yield (218)	4331.84	0.97	3924.07	4290.31	4306.98	4741.12	2.05	0.90	54.28	91.85	5333.65
FTSE SmallCap (236)	6211.72	0.97	5626.99	6152.01	6179.60	7253.20	3.45	-0.14	-211.84	206.40	10452.10
FTSE SmallCap ex Inv Co (126)	4945.72	1.16	4480.16	4889.03	4930.62	5985.81	3.66	2.43	11.24	160.20	8652.85
FTSE All-Share (586)	4105.09	0.86	3718.67	4070.00	4087.39	4109.33	3.56	1.45	19.35	141.28	8445.96
FTSE All-Share ex Inv Co (396)	4009.63	0.83	3632.19	3976.47	3994.13	3962.31	3.62	1.69	16.36	140.27	4286.70
FTSE All-Share ex Multinationals (523)	1078.70	1.37	812.80	1064.13	1071.48	1304.68	3.94	0.81	31.21	40.47	2298.57
FTSE Fledgling (81)	11574.25	0.29	10484.72	11540.92	11574.88	13135.91	3.80	4.04	6.52	360.76	25087.28
FTSE Fledgling ex Inv Co (31)	15030.68	0.17	13615.79	15005.07	15150.18	17256.82	3.59	7.84	3.56	459.51	31623.92
FTSE All-Small (317)	4331.98	0.93	3924.20	4291.94	4310.82	5050.62	3.47	0.11	255.32	143.50	9349.12
FTSE All-Small ex Inv Co (157)	3721.80	1.12	3371.45	3680.45	3711.91	4495.89	3.65	2.62	10.44	120.33	8246.46
FTSE AIM All-Share (754)	838.59	0.96	759.65	830.58	834.59	1177.48	1.65	1.69	35.93	13.09	985.61
FTSE All-Share Technology (21)	1991.06	1.25	1698.92	1966.57	1965.97	2334.43	1.92	0.90	57.54	39.63	2884.00
FTSE All-Share Telecommunications (6)	1429.89	-0.15	1220.09	1432.07	1429.92	1867.58	7.42	1.03	13.12	99.22	2186.41
FTSE All-Share Health Care (14)	14772.62	0.20	12605.05	14742.47	14759.16	12754.82	2.54	1.05	37.49	374.42	13682.30
FTSE All-Share Financials (254)	4569.84	1.39	3899.31	4507.14	4521.19	4766.10	3.70	0.92	29.40	166.18	5086.11
FTSE All-Share Real Estate (55)	839.54	2.24	749.39	821.12	830.91	1209.76	4.21	3.61	6.57	33.93	885.76
FTSE All-Share Consumer Discretionary (84)	4605.66	0.69	3929.88	4573.99	4615.14	5279.52	2.37	1.18	35.69	107.06	4884.81
FTSE All-Share Consumer Staples (24)	19456.89	-0.26	16602.01	19507.07	19586.79	19557.91	3.92	1.13	22.49	692.67	17841.06
FTSE All-Share Industrials (83)	6328.74	1.14	5400.13	6257.68	6280.14	7295.40	2.27	1.35	32.53	135.69	7326.76
FTSE All-Share Basic Materials (22)	9240.83	1.62	7884.94	9093.46	9236.95	7995.83	5.88	2.00	8.50	539.20	12598.00
FTSE All-Share Energy (13)	8358.89	1.30	7132.41	8251.55	8224.58	5931.47	3.61	2.73	10.14	303.49	10171.66
FTSE All-Share Utilities (10)	8574.81	0.47	7316.64	8534.62	8578.30	8635.26	4.48	0.57	38.98	373.12	13074.44
FTSE All-Share Software and Computer Services (18)	2146.75	1.22	1831.76	2120.92	2118.27	2509.30	1.93	0.89	57.97	43.04	3290.08
FTSE All-Share Technology Hardware and Equipment (3)	5146.15	1.93	4391.07	5048.93	5166.50	6586.13	1.72	1.19	48.57	78.21	6650.98
FTSE All-Share Telecommunications Equipment (1)	610.71	0.59	521.10	607.13	603.11	618.43	2.01	2.31	21.52	11.51	872.95
FTSE All-Share Telecommunications Service Providers (5)	2187.46	-0.19	1866.49	2191.59	2188.84	2886.36	7.69	1.01	12.87	157.08	3048.54
FTSE All-Share Health Care Providers (3)	10917.80	0.50	9315.85	10863.02	10873.19	8056.68	0.53	4.88	38.36	58.27	10133.49
FTSE All-Share Medical Equipment and Services (2)	5653.80	2.21	4824.22	5531.55	5521.04	5649.39	2.53	0.97	41.03	142.76	5461.35
FTSE All-Share Pharmaceuticals and Biotechnology (9)	21129.09	0.10	18028.85	21109.03	21136.36	18117.19	2.57	1.04	37.31	539.80	17621.45
FTSE All-Share Banks (12)	3200.92	1.10	2731.26	3166.21	3178.50	2859.27	4.07	2.60	9.44	129.94	2833.99
FTSE All-Share Finance and Credit Services (8)	10477.30	0.10	8939.98	10466.34	10214.68	9611.83	1.99	2.23	22.53	210.32	14079.69
FTSE All-Share Investment Banking and Brokerage Services (31)	8596.29	2.32	7334.97	8401.66	8432.02	10326.08	5.23	1.50	12.75	437.54	12143.50
FTSE All-Share Closed End Investments (190)	11727.22	1.28	10006.50	11578.60	11598.34	14101.59	2.68	-3.35	-11.15	300.52	7348.40
FTSE All-Share Life Insurance (6)	7151.12	2.64	6101.85	6967.11	7094.95	7625.29	4.28	1.08	21.59	294.59	8751.16
FTSE All-Share Nonlife Insurance (7)	3613.56	0.57	3083.35	3593.02	3595.37	3597.96	3.96	1.24	20.36	130.27	7695.58
FTSE All-Share Real Estate Investment and Services (10)	2132.34	1.65	1819.46	2097.77	2100.11	3049.47	2.36	3.62	11.69	41.03	6358.25
FTSE All-Share Real Estate Investment Trusts (45)	2084.68	2.35	1778.80	2036.76	2065.09	3000.48	4.55	3.61	6.08	93.09	3172.02
FTSE All-Share Automobiles and Parts (2)	1508.87	4.02	1287.48	1450.56	1492.71	3370.46	0.65	-53.35	-2.90	14.02	1569.74
FTSE All-Share Consumer Services (2)	3126.61	-0.18	2667.85	3132.34	3160.11	2505.86	1.23	2.58	31.67	38.43	3966.10
FTSE All-Share Household Goods and Home Construction (12)	8474.18	1.72	7230.78	8330.60	8471.34	14546.26	8.85	1.58	7.15	710.24	7625.47
FTSE All-Share Leisure Goods (2)	20498.35	2.88	17490.66	19923.74	19984.62	24183.47	3.30	1.59	19.04	831.45	22908.54
FTSE All-Share Personal Goods (4)	28129.70	0.95	24002.27	27863.61	28182.93	30389.02	1.84	2.94	18.51	402.68	22001.79
FTSE All-Share Media (11)	9414.92	-0.11	8033.48	9425.34	9479.48	9883.43	2.36	1.47	28.95	221.42	6624.36
FTSE All-Share Retailers (22)	1886.58	1.81	1609.77	1853.05	1888.60	2761.74	2.89	3.26	10.61	54.28	2462.02
FTSE All-Share Travel and Leisure (29)	6485.99	0.96	5534.31	6424.53	6453.59	6949.39	0.63	-8.13	-19.52	40.81	6708.43
FTSE All-Share Beverages (5)	28758.24	0.83	24538.59	28522.07	28648.73	30421.58	2.08	2.00	23.97	584.47	23047.35
FTSE All-Share Food Producers (10)	5972.44	0.36	5096.11	5950.89	6011.20	6692.08	2.31	2.55	16.98	98.17	5764.57
FTSE All-Share Tobacco (2)	35212.58	-1.73	30045.90	35832.81	35963.66	29143.79	6.74	0.87	17.09	1906.82	33072.31
FTSE All-Share Construction and Materials (15)	7217.79	0.95	6158.73	7149.64	7180.09	8638.75	3.20	0.64	48.51	230.56	8807.15
FTSE All-Share Aerospace and Defense (7)	5199.33	-1.32	4436.44	5268.72	5261.33	4314.00	2.27	0.12	382.80	104.10	6341.59
FTSE All-Share Electronic and Electrical Equipment (10)	10807.16	2.14	9221.44	10580.80	10586.69	14044.33	1.62	2.11	29.15	161.86	10689.19
FTSE All-Share General Industrials (8)	5021.39	1.44	4284.61	4949.96	5010.75	5585.81	2.85	1.24	28.36	142.00	6632.44
FTSE All-Share Industrial Engineering (5)	15926.40	2.55	13589.54	15530.22	15647.61	20021.69	1.64	2.01	30.33	261.52	21393.46
FTSE All-Share Industrial Support Services (30)	9919.85	0.96	8464.33	9825.08	9822.06	12213.97	1.93	1.67	30.94	194.99	11423.55
FTSE All-Share Industrial Transportation (8)	5526.22	3.53	4715.37	5337.69	5384.45	7077.40	2.11	3.22	14.70	99.15	5791.10
FTSE All-Share Industrial Materials (1)	15002.80	3.45	486.33	14502.71	15002.80	21754.06	2.19	1.81	25.22	329.06	18950.78
FTSE All-Share Industrial Metals and Mining (9)	8336.42	1.49	7113.23	8213.83	8348.09	6624.80	6.27	2.01	7.94	517.75	12796.90
FTSE All-Share Precious Metals and Mining (5)	10262.13	2.65	8756.38	9997.62	10279.52	18339.49	3.49	1.83	15.70	358.99	7235.16
FTSE All-Share Chemicals (7)	13323.53	2.62	11368.59	12983.34	13045.17	18558.93	2.67	1.81	20.74	355.95	13385.92
FTSE All-Share Oil. Gas and Coal (12)	8114.58	1.30	6923.94	8010.39	7984.21	5756.43	3.61	2.73	10.14	294.63	10240.57
FTSE Sector Indices											
Non Financials (332)	**5018.98**	**0.71**	**4546.53**	**4983.49**	**5006.40**	**4963.92**	**3.52**	**1.61**	**17.63**	**170.01**	**9085.33**

Hourly movements	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	High/day	Low/day
FTSE 100	7457.25	7451.56	7468.38	7470.07	7467.42	7453.00	7442.84	7450.49	7445.30	7475.75	7439.02
FTSE 250	18868.14	18790.61	18741.01	18762.99	18759.49	18762.58	18769.38	18788.45	18806.31	18873.02	18729.60
FTSE SmallCap	6177.31	6165.83	6151.04	6151.11	6152.79	6152.32	6150.42	6142.90	6139.71	6177.31	6138.70
FTSE All-Share	4077.05	4071.90	4077.79	4079.23	4077.95	4071.47	4067.02	4070.96	4069.09	4082.03	4065.12

Time of FTSE 100 Day's high:11:16:45 Day's Low13:56:00 FTSE 100 2010/11 High: 7672.40(10/02/2022) Low: 6826.15(12/10/2022)
Time of FTSE All-Share Day's high:11:17:00 Day's Low13:56:00 FTSE 100 2010/11 High: 4296.96(10/02/2022) Low: 3712.50(12/10/2022)

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FT 30 INDEX

	Dec 13	Dec 12	Dec 09	Dec 08	Dec 07	Yr Ago	High	Low
FT 30	2516.60	2488.50	2502.60	2495.30	2509.30	0.00	2880.10	2152.10
FT 30 Div Yield	-	-	-	-	-	0.00	3.93	2.74
P/E Ratio net	-	-	-	-	-	0.00	19.44	14.26

FT 30 hourly changes

8	9	10	11	12	13	14	15	16	High	Low
2488.5	2487.4	2494.8	2503.7	2510.2	2512.6	2537.6	2539.6	2513.9	2542.5	2481.3

FT30 constituents and recent additions/deletions can be found at www.ft.com/ft30

FT WILSHIRE 5000 INDEX SERIES

	Dec 12		Dec 12
FT Wilshire 5000	40407.15	FT Wilshire Mid Cap	5502.14
FT Wilshire 2500	5175.94	FT Wilshire Small Cap	4908.24
FT Wilshire Mega Cap	5152.72	FT Wilshire Micro Cap	4702.94
FT Wilshire Large Cap	5210.89		

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FTSE GLOBAL EQUITY INDEX SERIES

Dec 13 Regions & countries	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
FTSE Global All Cap	9433	698.44	0.5	0.5	-17.5	1120.05	-15.8	2.3
FTSE Global All Cap	9433	698.44	0.5	0.5	-17.5	1120.05	-15.8	2.3
FTSE Global Large Cap	1899	625.28	0.5	0.9	-17.6	1033.58	-15.9	2.3
FTSE Global Mid Cap	2252	903.77	0.6	-0.2	-15.8	1363.59	-14.0	2.2
FTSE Global Small Cap	5282	920.98	0.5	-1.4	-19.5	1328.25	-18.0	2.1
FTSE All-World	4151	410.87	0.5	0.7	-17.3	697.78	-15.5	2.3
FTSE World	2662	744.95	0.6	0.4	-17.0	1697.78	-15.3	2.3
FTSE Global All Cap ex UNITED KINGDOM In	9143	737.15	0.5	0.3	-17.8	1159.42	-16.1	2.2
FTSE Global All Cap ex USA	7625	493.45	-0.9	1.9	-17.7	877.96	-15.2	3.3
FTSE Global All Cap ex JAPAN	8029	729.33	0.6	0.5	-17.5	1179.97	-15.8	2.3
FTSE Global All Cap ex Eurozone	8771	739.14	0.6	0.3	-17.4	1159.52	-15.7	2.2
FTSE Developed	2178	684.41	0.7	0.4	-17.1	1104.87	-15.4	2.1
FTSE Developed All Cap	5822	712.46	0.7	0.1	-17.3	1133.16	-15.6	2.1
FTSE Developed Large Cap	835	641.37	0.7	0.5	-17.3	1053.82	-15.6	2.2
FTSE Developed Europe Large Cap	219	384.00	-0.6	3.5	-14.6	761.35	-11.8	3.2
FTSE Developed Europe Mid Cap	354	572.82	-0.9	0.8	-25.7	985.80	-23.6	3.0
FTSE Dev Europe Small Cap	745	803.83	-0.7	0.1	-27.2	1328.71	-25.1	3.2
FTSE North America Large Cap	235	854.83	1.4	-0.3	-18.0	1285.27	-16.8	1.7
FTSE North America Mid Cap	422	1129.57	1.4	-0.8	-13.6	1570.83	-12.1	1.8
FTSE North America Small Cap	1332	1094.33	1.2	-2.7	-17.1	1458.50	-15.9	1.7
FTSE North America	657	560.94	1.4	-0.4	-17.2	862.29	-15.9	1.7
FTSE Developed ex North America	1521	262.72	-0.8	2.0	-16.7	503.30	-14.2	3.1
FTSE Japan Large Cap	169	371.23	-0.8	-0.2	-18.6	545.75	-16.5	2.5
FTSE Japan Mid Cap	339	520.09	-0.9	1.0	-15.3	726.23	-13.1	2.6
FTSE Global wi JAPAN Small Cap	896	577.05	-0.7	0.6	-17.1	836.75	-14.8	2.8
FTSE Japan	508	152.67	-0.8	0.1	-17.9	251.31	-15.8	2.6
FTSE Asia Pacific Large Cap ex Japan	1080	680.23	-1.3	5.0	-18.4	1240.59	-16.0	3.2
FTSE Asia Pacific Mid Cap ex Japan	859	972.54	-0.8	4.5	-14.2	1710.47	-11.5	3.4
FTSE Asia Pacific Small Cap ex Japan	2052	543.91	-0.8	3.4	-25.3	928.82	-23.2	3.1
FTSE Asia Pacific Ex Japan	1939	542.04	-1.3	5.0	-18.0	1050.66	-15.6	3.2
FTSE Emerging All Cap	3611	707.92	-1.4	3.7	-19.6	1235.89	-16.8	3.7
FTSE Emerging Large Cap	1064	653.25	-1.6	4.1	-20.6	1147.11	-17.9	3.8
FTSE Emerging Mid Cap	909	1022.33	-1.0	1.7	-11.1	1794.94	-7.9	3.9
FTSE Emerging Small Cap	1638	764.63	-0.8	3.2	-21.1	1276.44	-18.5	3.4
FTSE Emerging Europe	111	121.83	2.0	7.7	-70.6	255.40	-69.3	2.9
FTSE Latin America All Cap	262	680.46	-2.7	-7.5	-4.0	1352.94	4.7	12.0
FTSE Middle East and Africa All Cap	329	719.00	-1.4	-6.4	-9.7	1318.49	-7.0	3.3
FTSE Global wi UNITED KINGDOM All Cap In	290	319.66	-0.8	5.2	-11.2	654.32	-8.0	3.6
FTSE Global wi USA All Cap	1808	962.74	1.4	-0.5	-17.4	1395.34	-16.2	1.6
FTSE Europe All Cap	1458	434.22	-0.7	2.9	-18.9	826.51	-16.4	3.2
FTSE Eurozone All Cap	662	419.16	-0.7	2.6	-19.2	791.80	-16.7	3.1
FTSE EDHEC-Risk Efficient All-World	4151	471.25	0.6	0.6	-13.7	742.89	-11.6	2.6
FTSE EDHEC-Risk Efficient Developed Europe	573	316.05	-0.7	1.7	-23.5	556.34	-21.2	3.3
Oil & Gas	130	399.46	1.3	-6.6	21.9	820.93	27.9	4.7
Oil & Gas Producers	86	395.60	1.2	-7.3	24.5	835.27	31.2	5.0

Dec 13 Sectors	No of stocks	US $ indices	Day %	Mth %	YTD %	Total retn	YTD %	Gr Div Yield
Oil Equipment & Services	24	274.50	1.9	-5.6	17.3	509.67	22.2	4.2
Basic Materials	390	609.88	-0.8	1.3	-9.3	1124.76	-5.3	4.7
Chemicals	194	800.93	-0.1	-1.6	-17.3	1419.04	-14.9	3.1
Forestry & Paper	20	263.97	-1.2	1.8	-13.5	533.67	-10.6	3.5
Industrial Metals & Mining	97	505.49	-1.2	3.0	-8.6	969.20	-3.7	7.3
Mining	79	983.64	-1.7	5.0	5.7	1920.56	12.3	5.9
Industrials	800	500.99	0.6	0.7	-16.6	799.90	-14.9	2.1
Construction & Materials	154	573.17	-0.4	0.2	-22.4	965.51	-20.8	2.2
Aerospace & Defense	35	899.95	1.1	5.1	12.0	1406.30	13.8	1.5
General Industrials	76	241.67	0.7	0.8	-12.9	427.53	-10.7	2.5
Electronic & Electrical Equipment	157	625.88	0.1	-1.0	-22.2	899.73	-20.9	1.5
Industrial Engineering	158	1003.28	0.5	0.4	-13.3	1595.40	-11.6	1.9
Industrial Transportation	131	932.23	1.1	1.3	-16.1	1518.67	-13.3	3.4
Support Services	89	528.35	0.7	-0.5	-25.6	786.90	-24.6	1.5
Consumer Goods	566	556.27	-0.5	1.4	-19.3	936.30	-17.6	2.4
Automobiles & Parts	132	490.80	-2.1	-6.1	-36.5	794.11	-35.5	2.1
Beverages	72	783.51	0.1	4.1	-9.8	1334.09	-0.7	2.2
Food Producers	134	726.88	0.1	2.9	-7.4	1254.09	-5.3	2.5
Household Goods & Home Construction	64	541.70	0.4	5.9	-17.2	913.73	-15.0	2.7
Leisure Goods	53	235.01	0.0	-0.8	-26.2	332.50	-25.2	1.4
Personal Goods	97	925.73	-0.2	4.4	-19.8	1427.63	-18.3	1.9
Tobacco	14	1020.42	0.1	7.1	6.1	2889.31	11.1	6.0
Health Care	341	740.32	0.5	4.4	-6.2	1180.65	-4.6	1.7
Health Care Equipment & Services	133	1409.52	1.1	3.1	-15.3	1730.24	-14.5	1.0
Pharmaceuticals & Biotechnology	208	501.19	0.2	5.2	0.8	859.38	3.1	2.1
Consumer Services	426	535.47	0.4	1.2	-24.0	765.09	-23.1	1.2
Food & Drug Retailers	69	328.20	0.1	4.4	-4.7	522.27	-2.5	2.3
General Retailers	141	924.60	0.3	-0.9	-27.7	1264.43	-27.0	1.0
Media	75	307.23	0.8	3.5	-34.5	441.67	-33.8	1.3
Travel & Leisure	141	461.18	0.6	3.3	-10.1	673.89	-9.1	1.1
Telecommunication	89	129.21	0.0	-2.3	-12.8	304.90	-9.4	4.2
Fixed Line Telecommuniations	31	101.94	0.1	-0.6	-9.6	276.40	-5.2	4.9
Mobile Telecommunications	58	151.89	-0.1	-3.2	-14.6	308.77	-11.6	3.9
Utilities	199	325.70	1.0	5.0	-5.1	762.98	-2.1	3.3
Electricity	141	368.49	1.2	4.1	-4.4	849.74	-1.6	3.1
Gas Water & Multiutilities	58	321.77	0.5	7.1	-6.7	780.93	-3.4	3.6
Financials	851	261.19	0.3	-0.2	-12.9	502.58	-10.3	3.2
Banks	270	195.95	0.1	-2.0	-13.4	420.53	-10.0	4.2
Nonlife Insurance	72	364.81	-0.1	3.7	4.1	609.17	7.1	2.8
Life Insurance	51	224.89	-0.6	5.5	-6.9	434.10	-3.2	3.9
Financial Services	209	435.50	1.1	-0.8	-12.7	661.88	-11.3	1.7
Technology	359	470.25	1.2	0.3	-30.7	613.92	-30.0	1.1
Software & Computer Services	184	702.44	1.3	0.5	-34.3	850.00	-33.9	0.7
Technology Hardware & Equipment	175	421.56	1.1	0.2	-26.4	592.26	-25.4	1.5
Alternative Energy	20	196.79	0.1	5.8	-5.6	282.42	-5.2	0.4
Real Estate Investment & Services	141	256.01	-1.6	3.3	-22.2	499.15	-19.9	3.1
Real Estate Investment Trusts	108	448.43	0.5	-0.4	-24.8	1049.44	-22.6	3.8
FTSE Global Large Cap	1899	625.28	0.5	0.9	-17.6	1033.58	-15.9	2.3

The FTSE Global Equity Series, launched in 2003, contains the FTSE Global Small Cap Indices and broader FTSE Global All Cap Indices (large/mid/small cap) as well as the enhanced FTSE All-World index Series (large/mid cap) - please see https://research.ftserussell.com/Products/indices/Home/indexfiltergeis?indexName=GEISAC&currency=USD&rtn=CAP&segment=global-developed–emerging. The trade names Fundamental Index® and RAFI® are registered trademarks and the patented and patent-pending proprietary intellectual property of Research Affiliates, LLC (US Patent Nos. 7,620,577; 7,747,502; 7,778,905; 7,792,719; Patent Pending Publ. Nos. US-2006-0149645-A1, US-2007-0055598-A1, US-2008-0288416-A1, US-2010- 0063942-A1, WO 2005/076812, WO 2007/078399 A2, WO 2008/118372, EPN 1733352, and HK1099110). "EDHEC™" is a trade mark of EDHEC Business School As of January 2nd 2006, FTSE is basing its sector indices on the Industrial Classification Benchmark - please see www.ftse.com/icb. For constituent changes and other information about FTSE, please see www.ftse.com. © FTSE International Limited. 2013. All Rights reserved. "FTSE®" is a trade mark of the London Stock Exchange Group companies and is used by FTSE International Limited under licence.

FTSE SECTORS: LEADERS & LAGGARDS

Year to date percentage changes

Oil & Gas Producers	41.66	Gas Water & Multi	-3.37	FTSE 250 Index	-18.72
Oil & Gas	40.93	Consumer Goods	-3.67	Leisure Goods	-19.27
Mining	21.02	Travel & Leisure	-6.15	Construct & Material	-20.04
Tobacco	20.22	Beverages	-7.87	Industrial Eng	-21.11
Aerospace & Defense	17.70	Life Insurance	-8.08	Oil Equipment & Serv	-22.29
Pharmace & Biotech	12.95	Nonlife Insurance	-8.28	Mobile Telecomms	-22.80
Basic Materials	12.55	Media	-8.52	Telecommunications	-23.88
Health Care	11.98	Software & Comp Serv	-9.78	Household Goods & Ho	-25.99
Banks	6.35	Technology	-9.95	Fixed Line Telecomms	-26.85
Electricity	3.81	Financials	-10.72	Electronic & Elec Eq	-27.00
Personal Goods	2.52	Tech Hardware & Eq	-11.41	Chemicals	-27.70
FTSE 100 Index	1.60	Financial Services	-13.00	Food & Drug Retailer	-30.01
Beverages	31.66	Food Producers	-13.61	General Retailers	-31.65
NON FINANCIALS Index	-1.04	Industrials	-14.52	Real Est Invest & Se	-32.54
Health Care Eq & Srv	-1.32	Consumer Services	-15.13	Real Est Invest & Tr	-32.55
Utilities	-1.57	FTSE SmallCap Index	-16.73	Industrial Transport	-44.26
FTSE All{HY-}Share Index	-2.45	Support Services	-17.73	Automobiles & Parts	-58.62
		Equity Invest Instr	-17.75	Industrial Metals &	-78.51

FTSE 100 SUMMARY

FTSE 100	Closing Price	Day's Change	FTSE 100	Closing Price	Day's Change
3I Group PLC	1356	23.00	International Consolidated Airlines Group S.A.	135.24	2.90
Admiral Group PLC	2052	36.00	Intertek Group PLC	4113	43.00
Airtel Africa PLC	117.40	0.30	Jd Sports Fashion PLC	122.60	1.70
Anglo American PLC	3205	50.00	Kingfisher PLC	240.30	5.00
Antofagasta PLC	1483	58.00	Land Securities Group PLC	628.40	13.20
Ashtead Group PLC	5056	186.00	Legal & General Group PLC	258.20	6.20
Associated British Foods PLC	1623.5	12.50	Lloyds Banking Group PLC	46.37	0.60
Astrazeneca PLC	11326	-24.00	London Stock Exchange Group PLC	7608	-18.00
Auto Trader Group PLC	569.40	12.40	M&G PLC	185.70	2.90
Aveva Group PLC	3203	1.00	Melrose Industries PLC	130.65	3.20
Aviva PLC	446.70	3.50	Mondi PLC	1468	16.00
B&M European Value Retail S.A.	409.90	4.70	National Grid PLC	1015.5	5.00
Bae Systems PLC	821.00	-10.00	Natwest Group PLC	263.50	3.20
Barclays PLC	161.78	3.64	Next PLC	5880	94.00
Barratt Developments PLC	409.00	8.60	Ocado Group PLC	700.00	30.60
Berkeley Group Holdings (The) PLC	3826	26.00	Pearson PLC	913.20	-13.80
BP PLC	471.05	8.95	Pershing Square Holdings LTD	2885	25.00
British American Tobacco PLC	3252.5	-55.00	Persimmon PLC	1267.5	15.50
British Land Company PLC	395.30	7.00	Phoenix Group Holdings PLC	609.40	10.40
Bt Group PLC	113.90	1.15	Prudential PLC	1100	39.00
Bunzl PLC	3023	13.00	Reckitt Benckiser Group PLC	5814	12.00
Burberry Group PLC	2129	13.00	Relx PLC	2326	-4.00
Centrica PLC	90.52	-1.70	Rentokil Initial PLC	534.60	1.20
Coca-Cola Hbc AG	1981	18.00	Rightmove PLC	559.80	10.00
Compass Group PLC	1899	-3.50	Rio Tinto PLC	5747	68.00
Convatec Group PLC	234.80	7.40	Rolls-Royce Holdings PLC	90.61	-2.23
Crh PLC	3257	46.00	Rs Group PLC	944.00	23.00
Croda International PLC	6996	166.00	Sage Group PLC	793.40	9.00
Dcc PLC	4262	48.00	Sainsbury (J) PLC	222.20	0.70
Dechra Pharmaceuticals PLC	2828	70.00	Schroders PLC	463.10	14.40
Diageo PLC	3759.5	31.00	Scottish Mortgage Investment Trust PLC	780.00	25.60
Endeavour Mining PLC	1719	47.00	Segro PLC	818.00	25.60
Entain PLC	1414	4.50	Severn Trent PLC	2729	16.00
Experian PLC	2950	26.00	Shell PLC	2318	22.50
F&C Investment Trust PLC	922.00	13.00	Smith & Nephew PLC	1125	20.00
Flutter Entertainment PLC	12090	105.00	Smith (Ds) PLC	324.80	3.10
Frasers Group PLC	759.00	6.00	Smiths Group PLC	1609	9.50
Fresnillo PLC	855.20	9.40	Smurfit Kappa Group PLC	3095	98.00
Glaxosmithkline PLC	1452.4	7.40	Spirax-Sarco Engineering PLC	11370	325.00
Glencore PLC	545.50	8.10	Sse PLC	1708.5	12.00
Haleon PLC	319.20	1.60	St. James's Place PLC	1156	24.00
Halma PLC	2186	49.00	Standard Chartered PLC	608.00	5.00
Harbour Energy PLC	311.20	4.80	Taylor Wimpey PLC	104.20	2.15
Hargreaves Lansdown PLC	885.40	29.00	Tesco PLC	226.50	-0.30
Homeserve PLC	1191	1.00	Unilever PLC	4105.5	-16.50
HSBC Holdings PLC	500.10	3.75	Unite Group PLC	938.00	23.50
Imperial Brands PLC	2020	-41.00	United Utilities Group PLC	1034	16.00
Informa PLC	615.60	-6.40	Vodafone Group PLC	86.49	-0.57
Intercontinental Hotels Group PLC	4986	25.00	Whitbread PLC	2670	53.00
Intermediate Capital Group PLC	1235	66.00	Wpp PLC	831.20	6.40

UK STOCK MARKET TRADING DATA

	Dec 13	Dec 12	Dec 09	Dec 08	Dec 07	Yr Ago
Order Book Turnover (m)	281.40	179.76	179.76	179.76	243.21	35.98
Order Book Bargains	794530.00	622239.00	622239.00	622239.00	672856.00	697691.00
Order Book Shares Traded (m)	1407.00	1027.00	1027.00	1027.00	1035.00	1307.00
Total Equity Turnover (£m)	9807.08	6303.70	6303.70	6303.70	7876.42	4939.74
Total Mkt Bargains	1004949.00	785769.00	785769.00	785769.00	833213.00	856977.00
Total Shares Traded (m)	5159.00	4021.00	4021.00	4021.00	4519.00	4876.00

† Excluding intra-market and overseas turnover. *UK only total at 6pm. ‡ UK plus intra-market turnover. (u) Unavaliable. (c) Market closed.

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UK RIGHTS OFFERS

Issue price	Amount paid up	Latest renun. date	High	Low	Stock	closing Price p	+or-

There are currently no rights offers by any companies listed on the LSE.

UK COMPANY RESULTS

Company		Turnover		Pre-tax		EPS(p)		Div(p)		Pay day	Total	
Begbies Traynor Group	Int	58.457	52.268	4.990	2.693	2.400	0.200L	1.20000	1.10000	May 5	3.600	3.100
Chemring Group	Pre	442.800	393.300	51.800	48.800	16.900	14.700	0.00000	3.20000	-	1.900	4.800
FinnCap Group	Int	16.352	31.687	2.592L	6.282	1.820L	2.960	0.00000	0.60000	-	1.150	1.600
Global Ports Holding	Int	118.349	61.060	4.358L	29.403L	0.264L	0.300L	0.00000	0.00000	-	0.000	0.000
Hyve Group	Pre	122.472	21.822	30.967L	27.465L	20.200L	7.300L	0.00000	0.00000	-	0.000	0.000
Image Scan Holdings	Pre	2.002	2.874	0.350L	0.189	0.200L	0.180	0.00000	0.00000	-	0.000	0.000
John Lewis of Hungerford	Pre	10.325	7.877	0.014	0.081	0.010	0.110	0.00000	0.00000	-	0.000	0.000
JPMorgan European Discovery Trust	Int			149.053L	113.841	95.520L	70.320	1.20000	1.20000	Jan 3	6.700	6.700
Lowland Investment Co	Pre			64.747L	131.907	24.000L	48.790	1.52500	1.52500	Jan 31	3.050	3.025
Nuformix	Int	0.000	0.050	0.424L	0.449L	0.060L	0.080L	0.00000	0.00000	-	0.000	0.000
Sosandar	Int	20.950	12.177	0.077	1.077L	0.030	0.510L	0.00000	0.00000	-	0.000	0.000
Sunrise Resources	Pre	0.000	0.000	0.478L	0.335L	0.013L	0.009L	0.00000	0.00000	-	0.000	0.000
Thames Ventures VCT 1	Int			1.956L	7.696	1.100L	4.300	1.50000	1.25000	Jan 18	3.250	2.500
The Global Smaller Companies Trust	Int			68.501L	54.586			0.63000	0.57000	Jan 26	1.900	1.770

Figures in £m. Earnings shown basic. Figures in light text are for corresponding period year earlier.
For more information on dividend payments visit www.ft.com/marketsdata

UK RECENT EQUITY ISSUES

Issue date	Issue price(p)	Sector	Stock code	Stock	Close price(p)	+/-	High	Low	Mkt Cap (£m)
12/05	0.30		HELD	Hellenic Dynamics PLC	0.19	0.00	0.32	0.13	2318.1
11/09	250.00		ITH	Ithaca Energy PLC	170.30	-1.70	254.90	166.50	171179.1

§Placing price. *Intoduction. ‡When issued. Annual report/prospectus available at www.ft.com/ir
For a full explanation of all the other symbols please refer to London Share Service notes.

MARKET DATA

FT500: THE WORLD'S LARGEST COMPANIES

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
Australia (A$)							
ANZ Bank	24.10	0.56	28.33	20.78	6.05	10.44	49635.06
BHP Group	46.08	-0.71	53.72	35.83	8.63	11.19	160502.98
CmwBkAu	106.44	1.05	109.20	86.98	3.18	20.69	123682.33
CSL	297.04	-1.16	304.70	240.10	0.98	43.96	98554.75
NatAusBk	30.79	0.60	33.75	25.43	2.82	16.95	66788.91
Telstra	4.03	0.03	4.20	3.62	2.40	33.88	32038.69
Wesfarmers	48.04	0.29	60.34	40.03	3.58	25.53	37477.93
Westpac Bank	23.66	0.30	24.67	18.80	3.63	17.79	56995.87
Woolworths	34.08	0.08	39.63	31.67	3.06	40.17	28524.89
Belgium (€)							
AnBshInBv	57.59	1.05	58.72	45.56	0.91	29.36	106432.93
KBC Grp	57.44	1.68	81.70	45.53	5.86	9.55	25474.79
Brazil (R$)							
Ambev	15.40	0.16	16.88	12.81	3.82	22.27	46045.44
Bradesco♦	12.45	-0.12	17.72	12.26	6.96	5.52	11511.42
Cielo	4.32	-0.12	6.22	2.01	3.52	14.00	2228.03
ItauHldFin♦	20.28	-0.44	26.04	18.86	3.99	7.68	19088.82
Petrobras	27.36	0.06	42.08	25.53	18.31	3.73	38655.51
Vale	86.72	0.63	107.11	61.90	15.64	3.71	78672.89
Canada (C$)							
Bausch Hlth	10.32	-0.10	36.26	5.10	-	-3.15	2757.5
BCE	63.00	-0.20	74.09	55.66	5.45	21.47	42422.2
BkMontrl	123.02	-2.12	154.47	113.73	3.61	9.63	61625.06
BkNvaS	67.67	-0.52	95.00	63.19	5.38	8.62	59529.17
Brookfield	58.88	11.29	63.88	41.28	1.09	19.91	69948.82
CanadPcR	108.83	0.70	111.43	86.12	0.69	26.53	74740.68
CanImp	56.56	-1.04	83.75	55.35	10.42	3.99	37837.69
CanNatRs	77.02	1.93	88.18	48.42	2.54	12.15	62973.22
CanNatRy	172.13	-0.89	175.39	137.26	1.40	25.46	85750.2
Enbridge	53.86	0.25	59.69	46.88	6.09	19.12	80526.31
GtWesLif	30.56	0.10	41.50	27.99	6.20	8.74	21026.63
ImpOil	66.01	-0.31	79.83	41.04	1.53	19.33	29480.65
Manulife	24.40	0.08	28.09	20.81	4.71	7.02	33936.9
Nutrien	105.55	-0.18	147.93	85.62	2.16	15.43	40562.39
RylBkC	129.29	-2.84	149.60	116.75	3.38	11.69	132277.26
SHOP	52.68	0.40	188.03	33.00	-	1.86	38846.88
Suncor En	42.30	0.95	53.62	28.77	2.44	15.56	42148.44
ThmReut	157.52	-0.08	159.82	119.23	1.27	11.05	55781.21
TntoDom	88.73	-2.42	109.08	77.27	3.61	11.32	119350.71
TrnCan	58.26	0.41	74.44	54.60	5.86	31.92	43787.32
China (HK$)							
AgricBkCh	2.58	-	3.15	2.22	8.36	3.34	10196.07
Bk China	2.73	-	3.20	2.51	8.25	3.33	29349.75
BkofComm	4.39	0.02	5.74	3.84	8.06	3.57	19760.7
BOE Tech	0.80	0.06	0.86	0.57	-	12.71	20.46
Ch Coms Cons	3.88	-0.03	5.17	3.09	5.31	3.17	2204.07
Ch Evrbrght	2.32	-0.03	3.11	2.04	10.45	3.09	3781.69
Ch Rail Cons	5.01	-0.03	5.95	3.75	5.29	2.62	1337.36
Ch Rail Gp	4.33	-0.10	5.88	3.48	4.81	3.43	2342.17
ChConstBk	4.71	-	6.23	4.12	7.98	3.37	145582.3
China Vanke	16.90	0.06	21.70	9.96	8.53	7.50	4142.36
ChinaCitic	3.43	-	4.08	2.92	8.28	3.13	6562.74
ChinaLife	12.08	-0.08	15.04	8.53	5.72	5.20	11556.59
ChinaMBank	41.05	-0.20	70.80	25.40	3.52	7.45	24228.8
ChinaMob	51.45	0.10	58.65	45.90	6.33	7.82	135335.92
ChinaPcIns	17.86	-0.20	25.90	12.10	7.44	5.73	6372.53
ChMinsheng	2.67	-	3.29	2.19	9.32	3.40	2856.11
ChMrchSecs	13.57	-0.02	18.08	12.06	3.34	11.69	14428.01
Chna Utd Coms	4.94	-0.14	5.25	3.30	2.35	23.93	21911.17
ChShenEgy	22.45	-0.05	27.65	17.76	9.24	6.71	9748.32
ChShpbldng	3.66	0.01	4.33	3.36	-	-262.70	11578.76
ChStConEng	5.77	-	6.40	4.67	3.86	4.32	33753.29
ChUncHK	4.70	-	4.89	3.27	3.39	10.20	18488.92
CNNC Intl	6.21	0.03	8.92	5.78	2.08	15.67	16769.32
CSR	3.17	0.01	3.73	2.37	6.61	8.58	1781.43
Daqin	6.71	-	7.25	5.95	7.41	9.81	14290.55
GuosenSec	9.10	0.01	11.70	8.43	2.62	10.09	11507.03
HaitongSecs	4.85	-0.07	7.34	3.77	6.00	5.19	2126
Hngzh HikVDT	34.62	0.23	54.75	28.10	2.39	18.37	45506.01
Hunng Pwr	3.22	-0.03	5.74	2.62	6.21	-3.56	1945.86
IM Baotou Stl	2.04	0.07	3.21	1.75	-	33.53	9257.35
In&CmBkCh	3.84	-0.02	4.94	3.37	8.01	3.46	42849.35
IndstrlBk	17.70	0.17	23.22	15.01	4.54	4.68	52674.76
Kweichow	1750	10.98	2216.96	1359	1.14	38.06	314920.03
Midea	0.39	-	0.60	0.32	-	-4.12	14.90
New Ch Life Ins	18.92	-0.14	24.70	12.04	8.20	3.54	2515.4
PetroChina	3.48	-0.02	4.49	3.01	6.95	6.91	9439.65
PingAnIns	50.95	0.60	69.40	31.30	4.98	7.97	48784.31
PngAnBnk	13.24	0.13	18.17	10.39	1.36	7.63	36805.92
Pwr Cons Corp	7.34	-0.04	9.81	6.65	1.25	14.73	11557.24
SaicMtr	15.11	0.07	21.61	13.77	4.08	7.30	25289.44
ShenwanHong	0.10	0.00	0.18	0.05	-	3.00	116.63
ShgPdgBk	7.32	0.06	8.80	6.64	6.51	4.52	30778.98
Sinopec Corp	3.74	0.02	4.28	3.06	3.77	4.44	12241.46
Sinopec Oil	2.02	-0.01	2.37	1.70	-	648.42	3926.57
Denmark (kr)							
DanskeBk	128.40	-0.20	133.25	91.28	1.52	9.02	15633.03
MollerMrsk	14775	-15.00	24070	13185	2.24	2.47	17469.16
NovoB	888.90	-6.10	902.50	604.40	1.03	43.97	218735.59

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
Finland (€)							
Nokia	4.60	-0.12	5.71	4.12	-	16.26	27495.28
SampoA	48.59	-0.01	49.30	35.85	3.43	10.61	27205.69
France (€)							
Airbus Grpe	113.48	1.38	120.36	86.52	-	21.26	95156.81
AirLiquide	138.20	2.00	153.40	114.48	1.95	26.06	76955.84
AXA	27.41	0.38	29.09	20.34	5.11	9.43	68529.32
BNP Parib	53.63	0.95	68.07	40.67	4.88	7.89	70424.06
ChristianDior	723.50	11.50	734.50	513.00	0.95	26.99	138936.14
Cred Agr	9.70	0.13	14.27	8.09	8.07	5.41	31390.83
Danone	49.73	0.12	58.24	46.48	3.82	17.29	35755.46
EDF	12.00	-	12.03	6.64	3.98	9.43	49616.99
Engie SA	14.35	-0.04	14.68	9.79	3.61	10.33	37182.93
EssilorLuxottica	183.70	2.05	188.64	132.70	0.58	57.25	87439.74
Hermes Intl	1562	26.00	1665.5	957.60	0.28	68.52	175428.65
LOreal	354.30	4.60	424.85	300.45	1.10	44.11	202305.62
LVMH	726.70	10.50	739.40	535.00	0.94	31.09	389069.03
Orange	9.23	-0.02	11.94	8.93	6.36	3132.22	26131.36
PernodRic	188.45	4.00	213.00	166.60	1.62	29.08	51714.06
Renault	33.66	-0.38	38.07	20.47	-	-25.69	10589.6
Safran	118.10	1.00	118.52	87.85	0.36	1207.15	53679.22
Sanofi	88.93	0.41	106.08	76.45	3.52	18.37	119915.11
Sant Gbn	47.03	0.91	64.82	35.20	2.83	11.50	25804.86
Schneider	141.04	3.88	173.78	110.02	1.80	25.43	85690.07
SocGen	23.09	0.65	37.68	18.34	2.35	3.99	20872.32
Total	57.89	1.27	60.44	42.30	4.57	11.37	161302.92
UnibailR	52.70	1.90	73.09	39.68	-	-7.67	7779.56
Vinci	97.45	0.07	103.74	80.74	2.70	22.09	61994.79
Vivendi	8.94	0.02	12.16	7.59	6.57	-16.31	10538.64
Germany (€)							
Allianz	203.65	0.25	232.50	156.22	4.60	13.20	86270.71
BASF	47.43	-0.50	69.15	37.90	6.78	8.05	45752.22
Bayer	52.80	-0.09	67.99	44.60	3.69	53.10	54483.95
BMW	84.56	-0.63	97.60	67.58	2.19	4.62	53467.97
Continental	54.94	-0.86	96.78	44.44	-	8.68	11541.64
Deut Bank	9.97	-0.11	14.64	7.46	-	10.06	21634.63
Deut Tlkm	19.37	-0.03	19.86	14.47	3.02	22.84	101440.82
DeutsPost	38.20	-0.34	56.91	29.68	3.53	9.92	49715.42
E.ON	9.19	-	12.54	7.28	4.99	5.24	25490.44
Fresenius Med	30.20	0.37	63.66	26.19	4.33	9.36	9294.3
Fresenius SE	26.44	0.24	38.11	19.76	3.32	8.57	15510.36
HenkelKgaA	62.85	-0.30	74.75	56.55	2.84	17.15	17150.36
Linde	315.80	-0.15	334.70	244.00	1.15	50.33	163986.57
Mercedes-Benz	63.12	-0.66	77.90	50.19	2.08	6.48	70928.45
MuenchRkv	304.80	-1.70	308.70	205.15	3.13	14.94	44852.38
SAP	102.44	-0.80	125.26	81.35	1.76	23.56	132184.92
Siemens	132.90	-0.86	154.70	93.67	2.57	20.50	118653.23
Volkswgn	179.95	-4.10	282.60	158.80	2.60	6.24	55775.28
Hong Kong (HK$)							
AIA	86.80	1.80	92.50	57.25	1.40	21.82	131454.94
BOC Hold	25.90	0.75	32.75	23.55	4.38	13.06	35205.45
Ch OSLnd&Inv	20.75	-0.25	27.35	14.58	5.29	5.06	29197.78
ChngKng	46.95	0.35	57.00	42.90	3.45	10.55	21761.29
Citic Ltd	7.82	-	9.26	7.01	6.28	3.55	29246.48
Citic Secs	16.08	-0.06	21.32	11.82	2.71	8.13	5416.54
CK Hutchison	45.20	-0.05	60.45	38.80	4.60	5.63	22282.61
CNOOC	10.00	0.15	12.54	7.65	4.13	8.57	57309.67
HangSeng	129.20	3.10	169.50	110.00	4.31	20.42	31756.73
HK Exc&Clr	343.20	4.00	483.60	208.20	2.43	38.00	55941.18
MTR	39.70	1.05	43.70	33.45	2.83	28.23	31655.38
SandsCh	26.55	1.10	27.20	12.50	-	-28.80	27625.21
SHK Props	106.30	5.40	106.90	83.10	4.25	11.93	39602.22
Tencent	318.40	0.80	488.00	198.60	0.46	12.31	392223.18
India (Rs)							
Bhartiartl	838.05	9.65	860.55	628.75	-	175.73	60277.12
HDFC Bk	1648.3	4.55	1722.1	1271.6	-	27.45	110998.2
Hind Unilevr	2710.3	-6.95	2741.6	1927	1.20	71.31	76908.23
HsngDevFin	2702.6	16.85	2933.8	2026	0.87	22.59	59464.96
ICICI Bk	932.95	2.65	958.20	642.15	0.22	29.07	78587.97
Infosys	1572.15	24.95	1923.3	1360	1.97	30.51	79898.96
ITC	345.60	2.40	361.45	207.00	3.17	28.20	51798.82
L&T	2172.9	9.20	2194.35	1456.35	0.84	35.40	36877.48
OilNatGas	144.35	2.00	189.80	119.85	6.43	4.01	21931.58
RelianceIn	2625	11.90	2856.15	2222	0.27	29.50	214498.38
SBI NewA	616.75	3.70	622.70	430.70	0.66	16.89	66475.51
SunPhrmInds	994.65	7.25	1070.95	745.30	0.77	36.40	28822.02
Tata Cons	3332.1	45.65	3920	2950.1	1.11	31.26	147248.09
Israel (ILS)							
TevaPha	29.47	-0.38	37.23	23.83	-	25.12	9565.39
Italy (€)							
Enel	5.25	0.05	7.07	3.96	6.83	24.95	56761.59
ENI	13.81	0.21	14.85	10.43	4.78	5.94	52988.04
Generali	17.45	0.18	21.55	13.67	8.24	10.02	29342.92
IntSPaolo	2.10	0.03	2.92	1.58	1.70	66.56	43430
Unicred	12.87	0.17	15.93	7.75	0.91	19.53	30627.33
Japan (¥)							
AstellasPh	2169	40.00	2205	1779	2.28	31.13	29460
Bridgestne	5032	-29.00	5509	4042	3.54	10.91	26569.96
Canon	3083	-22.00	3516	2538.5	3.40	14.22	30422.02
CntJpRwy	16520	140.00	17920	14660	0.85	-29.53	25177.52

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
Denso	7292	37.00	9575	6549	2.06	19.05	42508.75
EastJpRwy	7797	14.00	8280	6373	1.38	-7.46	21801.05
Fanuc	20815	-265.00	25300	18740	2.33	23.61	31093.44
FastRetail	85180	1280	88230	54310	0.66	38.12	66846.85
Fuji Hvy Ind	2264	34.00	2684	1664.5	2.66	24.80	12883.62
Hitachi	7179	128.00	7463	4750	1.72	10.03	51443.62
HondaMtr	3300	39.00	3755	3043	4.20	6.66	44225.3
JapanTob	2840	16.00	2848	2000	5.17	13.79	42022.72
KDDI	4031	47.00	4636	3321	3.20	12.88	68673.35
Keyence	56630	680.00	74710	44880	0.38	45.12	101896.58
MitsbCp	4430	8.00	4845	3542	3.35	9.42	48314.76
MitsubEst	988.82	2.77	1013.24	876.51	-	-	-
MitsubishiEle	1375	10.50	1518	1225.5	3.13	11.72	21842.94
MitsuiFud	944.72	-0.01	1007.12	684.38	-	-	-
MitUFJFin	758.00	2.50	828.30	615.50	3.68	7.33	72135.58
Mizuho Fin	1689	3.00	1727.5	1436.5	4.97	7.70	31730.06
Murata Mfg	7319	-35.00	9410	6604	1.76	14.01	36593.14
Nippon TT	3755	25.00	4128	3071	3.00	11.27	100622.63
Nissan Mt	462.50	0.50	643.00	436.50	-	14.00	14442.19
Nomura	487.70	2.20	562.20	460.30	5.07	-31.27	11667.28
Nppn Stl	2267.5	26.50	2318.5	1787	3.79	3.34	15942.39
Panasonic	1219	-3.00	1325	1006.5	2.20	11.49	22132.18
Seven & I	5595	7.00	6083	4868	1.97	19.85	36693.25
ShnEtsuCh	17260	160.00	20200	14185	1.80	15.41	52476.02
Softbank	6213	8.00	7180	4210	0.76	4.98	79197.36
Sony	10990	115.00	14745	9213	0.59	13.08	102536.08
SumitomoF	4657	2.00	4816	3672	4.61	8.45	47363.87
Takeda Ph	4160	109.00	4170	3088	4.65	13.92	48698.48
TokioMarine	2846.5	49.50	2970.5	2037	8.30	4.31	42961.28
Toyota	1968.5	5.50	2375.5	1805	2.78	8.28	237606.26
Mexico (Mex$)							
AmerMvl	18.10	0.09	21.44	15.66	1.89	13.93	39095.81
FEMSA UBD	155.40	1.25	169.96	120.63	1.37	120.88	17115.84
WalMrtMex	69.67	-0.93	82.93	64.81	0.76	33.03	61998.63
Netherlands (€)							
ASML Hld	593.20	24.10	724.50	376.10	0.56	46.81	254410.38
Heineken	89.84	-0.08	100.95	77.50	1.07	15.91	55052.31
ING	11.48	0.18	14.00	7.90	5.12	9.54	45496.43
Unilever	47.77	-0.24	49.09	39.36	3.00	24.52	150010.73
Norway (Kr)							
DNB	185.45	1.20	220.50	168.05	9.51	11.69	29613.34
Equinor	368.00	7.20	410.95	230.35	1.36	15.66	119666.48
Telenor	92.86	1.52	148.80	88.54	9.82	15.48	13307.77
Qatar (QR)							
QatarNtBk	17.70	-0.85	27.00	17.70	2.88	14.16	44891.81
Saudi Arabia (SR)							
AlRajhiBnk	74.00	-3.80	117.40	74.00	2.92	13.91	78718.16
Natnlcombnk	46.30	-1.50	82.00	46.30	2.82	17.23	55137.66
SaudiBasic	80.00	-2.00	141.40	80.00	3.66	11.54	63825.54
SaudiTelec	36.00	-0.65	48.88	36.00	10.02	7.05	47869.15
Singapore (S$)							
DBS	34.09	0.46	37.49	29.45	3.30	14.44	65181.32
JardnMt US$	50.34	1.52	62.10	42.60	3.13	9.15	14589.75
OCBC	12.41	0.06	13.54	11.18	3.09	12.79	41431.97
SingTel	2.65	0.06	2.88	2.31	2.58	46.22	32499.39
UOB	31.25	0.15	33.33	25.91	2.89	14.37	38879.3
South Africa (R)							
Firstrand	61.27	0.25	79.34	56.75	4.24	11.06	19947.4
MTN Grp	133.25	2.25	211.49	115.46	-	18.13	14572.19
Naspers N	2895.03	102.96	2931.84	1392.5	0.20	15.53	73175.71
South Korea (KRW)							
HyundMobis	200500	-7500.00	265500	189500	2.01	7.77	14468.21
KoreaElePwr	20700	50.00	25100	16500	5.96	-12.02	10170.41
SK Hynix	82300	1200	134000	78200	1.88	5.85	45855.35
SmsungEl	59700	200.00	80800	51800	2.43	10.27	272765.99
Spain (€)							
BBVA	5.56	0.07	6.12	3.97	6.54	7.73	35642.57
BcoSantdr	2.80	0.03	3.48	2.32	2.67	5.73	50000.12
CaixaBnk	3.31	0.01	3.64	2.22	0.80	22.21	28341.48
Iberdrola	11.00	-	11.49	8.47	3.75	19.28	74417.8
Inditex	24.76	0.52	29.07	18.55	0.87	26.69	82095.7
Repsol	14.33	0.15	16.23	9.63	4.10	8.93	20998.42
Telefonica	3.29	-0.17	5.06	3.24	10.28	2.46	20226.04
Sweden (SKr)							
AtlasCpcoB	116.40	-3.36	133.60	22.08	6.46	7.61	17539.11
Ericsson	65.71	-0.79	117.32	58.81	3.53	9.48	19489.25
H & M	116.70	2.20	191.86	98.25	5.56	15.75	16455.45
Investor	191.32	-1.28	228.75	158.22	1.88	8.06	33649.6
Nordea Bk	107.26	-1.62	113.78	85.25	14.03	12.25	38191.76
SEB	117.10	-1.35	136.15	91.64	8.88	9.58	24355.88
SvnskaHn	101.50	-1.05	107.45	80.88	5.07	9.75	19055.59
Swedbank	168.35	1.85	189.60	124.50	8.90	8.81	18397.05
Telia Co	28.28	-	41.70	27.93	7.28	9.77	11164.78
Volvo	191.48	-1.40	218.65	148.24	3.49	12.21	29362.11
Switzerland (SFr)							
ABB	29.59	0.55	33.86	23.84	2.62	14.50	62752.23
CredSuisse	3.07	-0.02	8.77	2.65	3.03	-4.92	8783.84
Nestle	109.56	0.06	128.90	103.42	2.34	19.43	325209.14
Novartis	84.80	-0.13	88.42	73.32	3.31	9.41	220017.87

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
Richemont	125.35	2.55	143.80	90.28	1.45	30.52	70627.34
Roche	307.25	4.25	404.20	298.60	2.66	21.02	232999.5
Swiss Re	86.46	0.38	102.20	68.18	6.37	21.33	29630.11
Swisscom	510.00	-	587.40	443.40	4.01	15.49	28516.37
UBS	17.46	0.51	19.90	13.10	1.85	9.18	66406.75
Zurich Fin	448.00	-2.50	461.70	376.20	4.16	15.24	72757.47
Taiwan (NT$)							
Chunghwa Telecom	111.00	-1.50	132.50	105.50	3.92	23.80	28027.58
Formosa PetChem	81.00	-0.10	103.50	75.20	0.74	15.37	25115.19
HonHaiPrc	101.00	-1.00	116.00	99.50	4.02	10.03	45574.44
MediaTek	709.00	-3.00	1200	533.00	5.30	9.93	36911.04
TaiwanSem	471.50	-3.50	650.00	370.00	2.30	18.48	397955.1
Thailand (THB)							
PTT Explor	32.00	-	41.25	31.50	6.02	8.85	26259.1
United Arab Emirates (Dhs)							
Emirtestele	24.30	0.70	38.98	11.60	2.75	27.17	57535.64
United Kingdom (p)							
Anglo American	3205	50.00	4292.5	2487.5	5.56	6.35	53142.97
AscBrFd	1623.5	12.50	2063	1223	0.38	26.83	15888.49
AstraZen	11326	-24.00	11540	8108.32	1.83	1917.71	217557.85
Aviva	446.70	3.50	606.58	341.92	4.78	58.78	15522.83
Barclays	161.78	3.64	209.45	132.06	1.85	3.93	31822.87
BP	471.05	8.95	503.30	319.95	3.34	17.09	105778.17
BrAmTob	3252.5	-55.00	3645	2670	6.63	11.00	90187.36
BT	113.90	1.15	120.40	110.55	-	11.06	14021.49
Compass	1899	-3.50	1970.5	1479.5	0.74	46.20	41330.27
Diageo	3759.5	31.00	4097	3282.5	1.93	28.92	105921.7
GlaxoSmh	1452.4	7.40	2753.96	1280.92	5.51	16.77	73714.66
Glencore	545.50	8.10	571.80	354.10	1.62	19.97	86921.15
HSBC	500.10	3.75	567.20	429.55	3.23	10.93	123793.28
Imperial Brands	2020	-41.00	2185	1434.23	6.84	6.75	23541
Jardine Mathes.	62.50	-	60.50	46.89	2.52	11.36	18114.01
LlydsBkg	46.37	0.60	56.00	38.10	5.54	6.44	38673.65
LSE Group	7608	-18.00	8612	6230	1.01	77.79	47977.34
Natl Grid	1015.5	5.00	1271.45	844.29	4.84	23.67	46078.18
Natwest Group	263.50	3.20	284.42	196.92	3.98	10.37	31566.99
Prudential	1100	39.00	1312	782.40	1.07	17.86	37490.04
ReckittB	5814	12.00	6824	5400	3.00	-25.16	51584.8
RELX	2326	-4.00	2474	2056	2.05	30.69	55217.46
RioTinto	5747	68.00	6343	4436.95	8.74	6.01	89028.6
RollsRoyce	90.61	-2.23	125.86	64.44	-	61.64	9398.9
Shell PLC	2318	22.50	2527	1535.56	2.61	12.22	202134.38
StandCh	608.00	5.00	641.00	414.00	1.46	13.63	21817.93
Tesco	226.50	-0.30	304.10	194.35	4.04	11.53	20733.02
Unilever	4105.5	-16.50	4229.5	3267.5	3.53	21.08	128937.32
Vodafone	86.49	-0.57	141.60	84.95	8.94	-193.49	29362.28
WPP	831.20	6.40	1231.5	713.00	3.19	15.83	11034.89
United States of America ($)							
21stC Fox A	30.70	-0.30	44.95	28.02	1.38	13.81	9285.97
3M	126.35	1.77	179.18	107.07	4.22	13.87	69839.07
AbbottLb	104.81	0.95	142.60	93.25	1.55	29.55	182743.97
Abbvie	165.40	1.68	175.91	120.75	2.83	28.48	292506.68
Accenture	286.69	1.28	417.37	242.95	1.16	32.33	190586.69
Activision Bli.	75.93	-0.18	82.00	57.47	0.56	24.52	59424.74
Adobe	326.68	-4.47	675.21	274.73	-	35.69	151873.53
Advanced Micro	70.14	-0.13	156.73	54.57	-	30.31	113090.66
AEP	96.67	0.30	105.60	80.30	2.79	21.65	49675.2
Aflac	71.20	0.11	72.70	52.07	1.67	12.38	44271.35
AirProd	315.58	3.48	320.62	216.24	1.71	36.82	70016.46
Allstate	130.11	-0.20	144.46	106.11	2.24	8.51	34506.42
Alphabet	94.94	-2.04	151.55	83.34	-	0.94	567076.62
Altria	46.37	0.16	57.05	40.35	6.83	38.43	83103.04
Amazon	88.46	0.21	177.50	85.87	-	1.52	902438.33
AmerAir	13.55	-0.78	21.42	11.65	-	-4.02	8806.16
AmerExpr	154.77	0.07	199.55	130.65	1.08	16.69	115649.2
AmerIntGrp	62.03	0.34	65.73	47.05	1.86	6.37	46087.05
AmerTower	211.11	-1.41	291.99	178.17	2.22	41.43	98294
Amgen	285.76	0.85	296.67	205.97	2.22	30.87	152475.59
Amphenol Corp	78.06	-0.21	88.45	61.67	0.90	34.54	46453.08
Analog Devices	166.01	-0.50	187.69	133.48	1.51	61.91	84548.22
Anthem	482.58	12.71	-	-	-	-	-
Aon Cp	304.14	-3.82	341.98	246.21	0.59	60.87	62912.25
Apple	140.94	-1.97	182.13	129.04	0.55	25.96	2242090.15
Applied Materi.	106.11	1.40	167.06	71.12	0.81	16.26	91287.43
Aptiv	97.79	-1.92	170.76	77.96	-	55.99	26496.16
ArcherDan	93.17	2.32	98.88	63.04	1.43	21.60	51181.47
AT&T	19.30	0.13	21.53	14.46	9.70	7.77	137551.1
Autodesk	193.34	-1.27	285.38	163.20	-	94.96	41734.19
AutomData	259.22	0.69	270.88	192.26	1.33	44.57	107531.65
AutoZone	2455.26	-1.66	2610.05	1703.32	-	24.64	46604.34
Avago Tech	518.50	-7.32	677.76	415.07	2.61	32.52	209993.25
BakerHu	27.88	-0.50	39.78	20.42	2.39	71.67	27920.92
Bank of NY	44.61	1.77	64.63	36.22	2.62	11.97	36057.37
BankAm	32.74	-0.26	50.11	29.31	2.14	10.19	262654.43
Baxter	52.35	0.84	89.70	49.83	1.87	22.98	26390.72
BectonDick	246.48	2.09	277.29	215.90	1.23	47.36	69846.47
BerkshHat	461593.4	-3244.10	544389.26	393012.25	-	8.62	275490.94
Biogen	292.15	0.68	311.88	187.16	-	31.20	42070.01
BlackRock	709.16	-1.13	933.06	503.12	2.10	20.61	106512.7
Boeing	176.50	-1.93	223.23	113.02	-	-27.42	104807.67

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
Booking Holdings	1955.56	-86.63	2715.66	1616.85	-	77.10	75854.98
Bristol-Myers	79.93	0.01	81.44	56.11	2.26	28.45	169944
Broadcom	518.50	-7.32	677.76	415.07	2.61	32.52	209993.25
Cadence Design	160.59	-3.07	194.97	132.32	-	71.35	44052.41
CapOne	93.23	-0.80	160.54	90.27	1.93	3.84	35585.76
CardinalHlth	80.15	0.75	81.57	47.54	2.20	46.13	21010.04
Carnival	8.89	-0.41	23.86	6.11	-	-1.18	9891.96
Caterpillar	228.98	0.69	239.85	160.60	1.68	21.50	119163.33
Centene Corp	87.35	1.42	98.53	71.89	-	42.55	49462.78
CharlesSch	80.19	-0.40	96.24	59.35	0.81	31.47	145612.66
Charter Comms	374.89	3.72	678.72	297.66	-	17.02	58359.98
Chevron Corp	172.52	0.51	189.68	110.73	2.77	23.54	333591.32
Chipotle Mexic.	1509.46	1.06	1776.67	1196.28	-	73.21	41843.91
Chubb	217.60	-0.03	222.00	173.78	1.32	12.54	90314.94
Cigna	332.19	2.55	332.90	206.44	1.08	23.46	101563.44
Cintas Corp	453.28	0.66	463.72	343.86	0.72	44.14	46028.46
Cisco	48.18	-0.41	64.29	38.61	2.79	19.00	197964.11
Citigroup	44.67	-0.31	69.11	40.01	4.11	4.89	86519.22
CME Grp	176.00	-3.89	256.94	166.58	1.84	26.82	63311.6
Coca-Cola	63.54	0.10	67.20	54.02	2.38	31.37	274779.57
Cognizant	59.40	-0.24	93.47	51.33	1.46	16.29	30526.93
ColgtPlm	77.55	0.34	85.18	67.84	2.08	33.78	64770.86
Comcast	34.62	-0.15	53.19	28.39	2.60	12.65	149349.44
ConocPhil	114.88	-0.73	138.49	66.06	1.53	21.02	143148.64
Constellation	246.66	-0.96	261.53	207.59	1.12	-1233.59	39767.63
Corning	33.12	-0.16	43.47	28.98	2.61	28.74	28013.27
Corteva	63.76	0.10	68.43	43.74	0.75	29.87	45556.01
Corteva	63.76	0.10	68.43	43.74	0.75	29.87	45556.01
Costco	481.97	0.81	612.27	406.51	0.60	42.73	213321.92
CrownCstl	138.72	1.45	208.69	121.71	3.54	57.71	60072.42
CSX	30.91	-0.25	38.63	25.80	1.14	18.96	64985.45
CVS	102.28	1.09	111.25	86.28	1.76	19.09	134392.54
Danaher	268.24	2.89	330.46	233.71	0.30	33.99	195268.72
Deere	440.65	2.40	448.40	283.81	0.80	26.87	132996.82
Delta	34.33	-1.58	46.27	27.20	-	45.76	22012
Devon Energy	64.25	0.12	79.40	35.55	2.76	17.03	42000.23
Digital Realty	108.80	0.75	176.53	85.76	3.84	20.34	31282.42
DiscFinServ	103.74	-0.13	129.12	87.64	1.63	6.46	28344.44
Disney	92.15	-0.14	157.50	86.28	-	59.51	168044
Dollar General	248.97	3.52	262.21	183.25	0.61	26.93	55663.42
DominRes	58.00	-0.25	88.78	57.40	3.91	20.19	48329.96
DukeEner	99.58	-0.93	116.33	83.76	3.53	22.43	76682.85
DuPont	69.70	-0.27	84.08	49.52	1.55	23.97	34626.19
Eaton	157.27	-0.54	174.47	122.50	1.74	32.71	62546.28
eBay	43.16	-0.19	67.71	35.92	1.50	126.15	23421.17
Ecolab	147.97	-0.46	236.89	131.04	1.19	42.03	42146.01
Edwards Lifesc.	72.58	0.31	131.73	67.13	-	33.87	44873.35
Eli Lilly	371.97	3.43	375.25	231.87	0.82	67.51	353437.67
Emerson	94.71	0.36	100.00	72.41	1.93	22.97	56011.49
EOG Res	126.16	-1.63	150.88	80.67	1.15	17.54	74105.06
Equinix	685.12	-1.75	847.10	494.89	1.51	137.61	63399.71
EquityResTP	61.96	0.26	94.32	59.32	3.50	20.08	23415.86
Exelon	42.31	-0.56	50.71	29.10	3.26	27.01	42045.23
ExxonMb	103.65	-0.23	114.66	57.96	3.03	21.36	426861.11
Fedex	172.28	-0.77	260.50	141.92	1.50	10.29	44830.67
Fidelity NIS	69.23	-0.50	122.06	56.53	2.03	114.77	41079.66
Fiserv	100.49	0.14	110.94	87.03	-	56.09	63813.97
FordMtr	13.10	-0.18	25.87	10.61	0.69	3.27	51740.31
Franklin	26.78	0.18	35.18	20.24	3.80	7.87	13378.18
GenDyn	246.21	-2.07	256.86	197.03	1.71	23.68	67596.7
GenElectric	85.00	-0.28	101.91	59.93	0.34	-29.05	92876.79
GenMills	87.22	1.84	87.30	61.67	2.13	25.59	51768.18
GenMotors	37.96	-0.06	67.21	30.33	-	6.29	53929.65
GileadSci	87.79	-0.17	89.10	57.17	2.91	19.78	110110.07
GoldmSchs	359.92	-2.99	401.75	277.84	1.63	6.72	121881.36
Halliburton	35.05	-1.03	43.99	21.07	0.67	21.88	31827.04
HCA Hold	238.11	1.49	279.02	164.47	0.73	12.50	67317.67
Hew-Pack	27.83	-0.48	41.47	24.08	2.72	5.58	27995.28
Hilton Worldwi.	134.32	-3.25	167.99	108.41	-	102.18	36327.65
HiltonWwde	134.32	-3.25	167.99	108.41	-	102.18	36327.65
HomeDep	320.15	2.70	419.85	264.51	1.87	22.68	327746.02
Honywell	213.45	0.26	220.96	166.63	1.59	29.97	143507.18
HumanaInc	549.18	2.83	571.30	363.73	0.46	26.91	69526.36
IBM	147.27	-0.23	150.46	115.55	4.00	31.40	133150.69
IDEXX Laborato.	420.10	4.71	664.70	317.06	-	54.26	34791.4
IllinoisTool	220.10	-1.49	248.11	173.52	1.93	28.73	67611.72
Illumina	208.52	2.54	397.44	173.45	-	45.95	32800.2
Intcntl Exch	103.53	-2.21	138.46	88.60	1.15	16.02	57826.85
Intel	28.33	-0.27	55.00	24.59	4.42	6.47	116917.91
Intuit	388.65	-1.13	684.07	339.36	0.59	54.06	109181.64
John&John	177.17	1.07	186.69	155.72	2.13	25.20	463208.06
JohnsonCn	66.39	0.29	81.69	45.52	1.56	33.67	45590.27
JPMrgnCh	131.50	-0.09	163.39	101.28	2.60	9.51	385716.44
Kimb-Clark	136.70	0.69	144.53	108.74	3.10	28.49	46135.17
KinderM	18.04	-0.06	20.20	15.01	5.54	43.29	40549.27
KLA Corp	388.09	4.85	442.44	250.20	0.90	22.18	54999.47
Kraft Heinz	39.89	0.47	44.87	32.73	3.61	54.03	48862.46
Kroger	46.94	0.61	62.78	41.82	1.51	23.80	33599.95
LasVegasSd	47.13	0.33	49.30	28.88	-	-34.67	36015.16
LibertyGbl	18.94	-0.12	29.08	15.22	-	0.90	3255.83
Lilly (E)	371.97	3.43	375.25	231.87	0.82	67.51	353437.67

Stock	Price	Day Chg	52 Week High	52 Week Low	Yld	P/E	MCap m
Linde	331.40	-0.10	346.50	262.47	1.15	50.28	163837.38
Lockheed	481.20	-2.80	498.95	333.42	2.08	22.95	126109.99
Lowes	206.89	4.98	263.31	170.12	1.32	18.91	128416.74
Lyondell	81.67	-0.63	117.22	71.46	4.89	5.41	26593.75
Marathon Ptl	109.00	-0.29	127.62	59.96	1.92	59.93	51084.03
Marsh&M	171.24	-0.71	183.14	142.80	1.41	29.25	84936.67
MasterCard	347.42	-0.11	399.92	276.87	0.58	44.05	331370.25
McDonald's	270.34	-1.43	281.67	217.68	1.75	29.91	198003.47
McKesson	385.51	7.47	401.78	219.23	0.42	48.49	54662.8
Medtronic	76.91	-0.17	114.44	75.83	2.92	23.31	102304.14
Merck	110.09	1.16	110.98	71.50	2.16	25.16	279121.74
Meta	196.64	0.99	384.33	169.00	-	15.41	450997.53
Metlife	74.59	-0.69	77.36	57.41	2.29	11.33	58523.78
Microsoft	244.37	-0.75	344.30	213.43	0.85	28.91	1821649.6
Mnstr Bvrg	101.23	-0.21	104.65	71.78	-	43.75	52816.11
MondelezInt	68.03	0.74	69.47	54.72	1.76	24.86	92903.03
Monsanto	10.06	0.02	10.06	9.66	-	51.22	251.50
MorganStly	87.28	-0.23	109.73	72.05	2.17	12.07	147512.75
Netflix	308.42	2.86	632.46	162.71	-	30.48	137253.22
NextEraE	85.29	0.11	92.91	67.22	1.72	124.44	169485.19
Nike	108.33	0.40	173.35	82.22	0.97	31.45	136891.49
NorfolkS	241.55	-1.00	296.87	203.65	1.55	22.15	55922.26
Northrop	540.21	8.40	556.27	360.75	1.03	13.78	83144.89
NXP	163.95	0.87	239.91	132.08	1.24	26.82	42485.16
Occid Pet	63.95	-0.19	77.13	26.05	0.06	34.48	58125.06
Oracle	78.78	-0.13	106.34	60.78	1.48	33.08	212403.98
Pepsico	182.18	0.55	186.62	153.37	2.10	36.86	250991.06
Perrigo	31.61	-0.12	43.90	31.01	2.73	-35.83	4255.96
Pfizer	50.24	0.53	61.71	41.45	2.80	14.20	282012.92
Phillips66	103.01	-0.07	113.53	68.57	3.16	38.52	48685.84
PhilMorris	101.88	0.25	112.48	82.85	4.33	19.41	157934.61
PNCFin	155.10	3.24	214.50	143.52	2.79	13.56	62554.78
PPG Inds	129.44	-2.60	172.78	107.06	1.65	31.55	30421.95
ProctGmbl	150.24	0.96	165.35	122.18	2.14	28.36	358397.44
Prudntl	102.63	-0.66	124.22	85.46	4.04	5.84	38178.36
PublStor	296.82	7.83	421.76	270.73	2.43	33.40	52132.99
Qualcomm	118.21	-1.57	192.68	101.93	2.05	15.04	132513.41
Raytheon	99.04	0.31	106.02	79.69	1.82	42.64	145594.82
Regen Pharm	764.27	16.80	769.63	538.01	-	11.79	81840.93
S&P Global	351.52	-0.17	484.21	279.32	0.79	31.21	114525.22
Salesforce	130.48	-2.79	270.57	130.02	-	97.00	130480
Schlmbrg	49.80	-1.08	56.04	27.65	0.90	41.90	70616.09
Sempra Energy	162.42	-2.93	176.47	124.44	2.44	44.99	51054.02
Shrwin-Will	251.12	-2.34	354.15	195.24	0.79	39.96	65076.09
SimonProp	119.05	0.79	161.87	86.02	5.41	19.33	38922.9
SouthCpr	60.03	-0.83	79.32	42.42	4.80	15.19	46409.1
Starbucks	101.87	-0.21	117.34	68.39	1.63	30.58	116926.39
StateSt	80.45	6.09	103.76	58.62	2.44	12.43	29520.33
Stryker	242.08	6.54	279.28	188.84	0.96	51.61	91610.32
Sychrony Fin	34.63	-0.01	48.40	27.22	2.35	5.07	15602.25
T-MobileUS	148.79	-0.60	154.38	101.51	-	68.57	185117.69
Target	153.76	-1.29	254.87	137.16	1.87	12.00	70769.98
TE Connect	121.56	0.73	164.12	104.76	1.47	18.34	38562.55
Tesla Mtrs	174.04	-5.78	384.29	166.19	-	39.45	549575.24
TexasInstr	173.75	-0.59	199.86	144.46	2.18	23.36	157690.58
TheTrvelers	188.05	-0.45	191.16	149.65	1.73	12.88	44069.05
ThrmoFshr	558.14	7.61	668.94	475.77	0.17	31.86	218900.03
TJX Cos	79.40	0.04	81.17	53.69	1.19	32.35	91747.03
Truist Financial Corp	41.84	-0.05	66.10	40.01	4.00	10.40	55511.9
Twitter	53.70	0.35	60.16	31.30	-	-224.30	41093.72
UnionPac	212.22	1.08	278.94	183.70	1.96	21.78	130473.03
UPS	174.67	-0.43	233.72	154.87	2.10	13.22	127477.82
USBancorp	43.56	0.62	60.50	38.39	3.64	9.49	64722.47
UtdHlthcre	542.91	3.59	558.10	445.74	0.93	33.35	507267.46
ValeroEngy	120.19	1.33	146.81	65.13	2.94	58.81	46336.04
Verizon	37.17	0.28	55.51	34.55	6.14	7.76	156107.21
VertexPharm	317.58	5.77	323.61	203.13	-	39.15	81520.07
VF Cp	28.97	-0.42	78.17	26.46	6.12	10.55	11256.76
Visa Inc	207.81	-1.27	235.85	174.60	0.58	38.21	338284.21
Walgreen	40.65	0.06	53.46	30.39	4.25	6.54	35154.65
WalMartSto♦	149.11	-0.78	160.77	117.27	1.34	33.69	402119.86
Walt Disney	92.15	-0.14	157.50	86.28	-	59.51	168044
Waste Manage.	165.21	-0.35	175.98	138.58	1.25	42.77	67814.92
WellsFargo	42.45	-0.95	60.30	36.54	1.64	9.53	161755.34
Williams Cos	33.79	0.32	37.97	24.86	4.37	30.27	41167.7
Workday	164.72	3.36	285.58	128.72	-	1510.25	33273.44
Yum!Brnds	128.27	-2.35	139.85	103.97	1.40	27.35	36132.1
Zoetis	150.25	-2.80	249.27	124.15	0.60	39.08	70027.32
Zoom	69.87	-1.60	205.22	69.54	-	17.08	17535.63
Venezuela (VEF)							
Bco de Vnzla	2.15	0.35	2.21	0.32	131.88	-	555.82
Bco Provncl	4.35	0.11	4.39	1.70	-	0.00	115.63

Closing prices and highs & lows are in traded currency (with variations for that country indicated by stock), market capitalisation is in USD. Highs & lows are based on intraday trading over a rolling 52 week period.
♦ ex-dividend
■ ex-capital redistribution
price at time of suspension

FT 500: TOP 20

	Close price	Prev price	Day change	Day change %	Week change	Week change %	Month change %
SHK Props	106.30	100.90	5.40	5.35	12.80	13.7	23.82
ShenwanHong	0.10	0.10	0.00	-0.96	0.01	13.2	14.44
SandsCh	26.55	25.45	1.10	4.32	2.25	9.3	58.33
Naspers N	2895.03	2792.07	102.96	3.69	235.59	8.9	21.27
MTR	39.70	38.65	1.05	2.72	3.15	8.6	11.50
BOE Tech	0.80	0.74	0.06	8.11	0.06	8.1	9.59
BOC Hold	25.90	25.15	0.75	2.98	1.90	7.9	2.57
Midea	0.39	0.39	0.00	0.00	0.02	5.5	6.94
Bausch Hlth	10.83	10.42	0.41	3.93	0.55	5.4	9.06
JardnMt US$	50.34	48.82	1.52	3.11	2.49	5.2	6.43
Takeda Ph	4160.00	4051.00	109.00	2.69	205.00	5.2	7.55
Kweichow	1750.00	1739.02	10.98	0.63	85.10	5.1	17.85
GlaxoSmh	1452.40	1445.00	7.40	0.51	64.60	4.7	9.47
Sanofi	89.09	88.52	0.57	0.64	3.70	4.3	8.06
KoreaElePwr	20700.00	20650.00	50.00	0.24	850.00	4.3	8.95
HK Exc&Clr	343.20	339.20	4.00	1.18	13.80	4.2	34.17
L&T	2172.90	2163.70	9.20	0.43	87.30	4.2	8.05
FEMSA UBD	157.41	154.15	3.26	2.11	6.30	4.2	4.75
TokioMarine	2846.50	2797.00	49.50	1.77	112.00	4.1	1.05
AIA	86.80	85.00	1.80	2.12	3.40	4.1	29.26

Based on the FT Global 500 companies in local currency

FT 500: BOTTOM 20

	Close price	Prev price	Day change	Day change %	Week change	Week change %	Month change %
Hunng Pwr	3.22	3.25	-0.03	-0.92	-0.35	-9.8	3.54
Pwr Cons Corp	7.34	7.38	-0.04	-0.54	-0.69	-8.6	0.96
ImpOil	66.80	66.32	0.48	0.72	-5.82	-8.0	-13.09
Telefonica	3.29	3.46	-0.17	-4.91	-0.29	-8.0	-8.12
ItauHldFin	20.57	20.72	-0.15	-0.72	-1.59	-7.2	-10.26
Petrobras	27.16	27.30	-0.14	-0.51	-2.07	-7.1	-11.73
WalMrtMex	69.99	70.60	-0.61	-0.86	-5.00	-6.7	-3.84
BkMontrl	124.71	125.13	-0.42	-0.34	-8.30	-6.2	-6.66
Sinopec Oil	2.02	2.03	-0.01	-0.49	-0.12	-5.6	2.54
ChStConEng	5.77	5.77	0.00	0.00	-0.34	-5.6	17.52
BT	113.90	112.75	1.15	1.02	-6.40	-5.3	-5.34
Ch Coms Cons	3.88	3.91	-0.03	-0.77	-0.21	-5.1	20.50
Ch Rail Gp	4.33	4.43	-0.10	-2.26	-0.23	-5.0	19.67
Chna Utd Coms	4.94	5.08	-0.14	-2.76	-0.26	-5.0	39.55
BrAmTob	3252.50	3307.50	-55.00	-1.66	-166.50	-4.9	2.34
Ch Rail Cons	5.01	5.04	-0.03	-0.60	-0.24	-4.6	22.85
ChinaPcIns	17.86	18.06	-0.20	-1.11	-0.82	-4.4	22.22
SunPhrmInds	994.65	987.40	7.25	0.73	-44.75	-4.3	-1.86
HonHaiPrc	101.00	102.00	-1.00	-0.98	-4.50	-4.3	1.00
Imperial Brands	2020.00	2061.00	-41.00	-1.99	-88.00	-4.2	1.73

Based on the FT Global 500 companies in local currency

BONDS: HIGH YIELD & EMERGING MARKET

Dec 13	Red date	Coupon	Ratings S*	Ratings M*	Ratings F*	Bid price	Bid yield	Day's chge yield	Mth's chge yield	Spread vs US
High Yield US$										
HCA Inc.	04/24	8.36	BB-	Ba2	BB	113.75	4.24	0.00	0.12	-
High Yield Euro										
Aldesa Financial Services S.A.	04/21	7.25	-	-	B	71.10	28.23	0.00	0.64	25.98
Emerging US$										
Peru	03/19	7.13	BBB+	A3	BBB+	104.40	2.60	-	-	0.34
Colombia	01/26	4.50	-	Baa2	BBB-	109.50	2.33	0.16	0.52	1.28
Brazil	04/26	6.00	-	Ba2	BB-	115.15	2.78	-0.01	0.65	1.73
Poland	04/26	3.25	-	A2	A-	111.22	0.98	0.03	0.16	-0.07
Mexico	05/26	11.50	-	Baa1	BBB-	149.00	1.61	0.00	-0.12	0.56
Turkey	03/27	6.00	-	B2	BB-	102.88	5.43	0.14	0.83	4.38
Turkey	03/27	6.00	-	Ba2	BB+	101.26	5.82	0.00	0.17	3.07
Peru	08/27	4.13	BBB+	A3	BBB+	103.50	3.66	0.01	-0.02	0.80
Russia	06/28	12.75	-	Baa3	BBB	168.12	2.48	0.07	0.05	-
Brazil	02/47	5.63	-	Ba2	BB-	101.48	5.52	0.08	0.80	-
Emerging Euro										
Brazil	04/21	2.88	BB-	Ba2	BB-	103.09	0.05	0.01	-0.09	-1.19
Mexico	04/23	2.75	-	Baa1	BBB-	106.48	-0.26	-	-	-0.36
Mexico	04/23	2.75	BBB+	A3	BBB+	107.76	0.76	0.00	-0.07	-1.56
Bulgaria	03/28	3.00	BBB-	Baa2	BBB	117.04	1.00	0.02	-0.15	-1.42

Interactive Data Pricing and Reference Data LLC, an ICE Data Services company. US $ denominated bonds NY close; all other London close. *S - Standard & Poor's, M - Moody's, F - Fitch.

BONDS: GLOBAL INVESTMENT GRADE

Dec 13	Red date	Coupon	Ratings S*	Ratings M*	Ratings F*	Bid price	Bid yield	Day's chge yield	Mth's chge yield	Spread vs US
US$										
FleetBoston Financial Corp.	01/28	6.88	BBB+	Baa1	A-	129.00	2.54	-0.01	-0.05	-
The Goldman Sachs Group, Inc.	02/28	5.00	BBB+	A3	A	117.21	2.47	0.00	0.32	-
NationsBank Corp.	03/28	6.80	BBB+	Baa1	A-	127.69	2.72	-0.01	0.06	-
GTE LLC	04/28	6.94	BBB+	Baa2	A-	128.27	2.80	0.00	-0.11	-
United Utilities PLC	08/28	6.88	BBB	Baa1	A-	130.43	2.62	-0.07	-0.22	-
Barclays Bank plc	01/29	4.50	A	A1	A+	96.46	5.02	0.00	0.02	-
Euro										
Electricite de France (EDF)	04/30	4.63	A-	A3	A-	137.45	0.82	-0.01	0.10	-
The Goldman Sachs Group, Inc.	02/31	3.00	BBB+	A3	A	124.42	0.68	0.00	-0.11	-
The Goldman Sachs Group, Inc.	02/31	3.00	BBB+	A3	A	121.70	0.93	0.00	0.02	-
Finland	04/31	0.75	AA+	Aa1	AA+	111.08	-0.27	0.00	-0.05	-0.87
Yen										
Mexico	06/26	1.09	-	Baa1	BBB-	98.73	1.34	-0.02	-0.14	0.27
£ Sterling										
innogy Fin B.V.	06/30	6.25	BBB	Baa2	A-	137.45	2.19	-0.03	0.02	-
innogy Fin B.V.	06/30	6.25	BBB	Baa2	A-	128.68	3.20	0.00	-0.01	0.40

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INTEREST RATES: OFFICIAL

Dec 13	Rate	Current	Since	Last
US	Fed Funds	3.00-3.25	21-09-2022	2.25-2.5
US	Prime	6.25	22-09-2022	5.50
US	Discount	3.25	22-09-2022	2.50
Euro	Repo	0.53	01-11-2022	0.374
UK	Repo	3.00	02-11-2022	2.25
Japan	O'night Call	0.00-0.10	01-02-2016	0.00
Switzerland	Libor Target	-1.25-0.25	15-01-2015	-0.75--0.25

INTEREST RATES: MARKET

Dec 13 (Libor: Dec 12)	Over night	Change Day	Change Week	Change Month	One month	Three month	Six month	One year
US$ Libor	3.81186	-0.006	-0.004	0.022	4.29214	4.75271	5.16100	5.52557
Euro Libor	-0.64957	-0.064	0.000	0.001	-0.61943	-0.58057	-0.55600	-0.48571
£ Libor	0.18063	-0.005	0.000	0.062	3.47480	3.79610	4.30060	0.81363
Swiss Fr Libor				-0.002	-0.77540	-0.75300	-0.70280	-0.55320
Yen Libor				0.000	-0.06005	-0.04960	0.03713	0.04867
Euro Euribor				0.228	1.83300	2.06300	2.38700	2.63200
Sterling CDs				0.000	0.50000	0.63000	0.78500	
US$ CDs				0.020	4.31000	4.65000	5.03000	
Euro CDs				0.020	1.67000	2.00000	2.36000	

Dec 13	Short term		7 Days notice		One month		Three month		Six month		One year	
Euro	1.14	1.44	1.24	1.54	1.52	1.82	1.85	2.15	2.21	2.51	2.50	2.80
Sterling					0.45	0.55	0.58	0.68	0.71	0.86	0.90	1.05
US Dollar	3.63	3.83	4.16	4.36	4.21	4.41	4.55	4.75	4.93	5.13	5.15	5.35
Japanese Yen	-0.15	0.05	-0.20	0.00	-0.20	0.00	-0.15	0.05	-0.10	0.20	-0.05	0.25

Libor rates come from ICE (see www.theice.com) and are fixed at 11am UK time. Other data sources: US $, Euro & CDs: Tullett Prebon; SDR, US Discount: IMF; EONIA: ECB; Swiss Libor: SNB; EURONIA, RONIA & SONIA: WMBA.

BOND INDICES

	Index	Day's change	Month's change	Year change	Return 1 month	Return 1 year
Markit IBoxx						
ABF Pan-Asia unhedged	201.64	-0.31	2.19	-8.25	3.79	-7.87
Corporates(£)	328.86	-0.22	0.09	-16.91	1.84	-18.45
Corporates(€)	212.19	-0.06	0.56	-12.15	2.29	-12.72
Eurozone Sov(€)	218.31	0.08	0.39	-14.20	2.60	-15.69
Gilts(£)	278.22	-0.44	-1.32	-22.60	-0.38	-25.36
Overall(£)	286.23	-0.38	-0.97	-20.93	0.09	-23.39
Overall(€)	212.84	0.03	0.44	-13.72	2.39	-14.94
FTSE						
Sterling Corporate (£)	-	-	-	-	-	-
Euro Corporate (€)	104.47	-0.05	-	-	0.54	-1.73
Euro Emerging Mkts (€)	740.73	10.84	-	-	18.94	-5.86
Eurozone Govt Bond	110.04	-0.19	-	-	-0.34	-0.64

CREDIT INDICES

	Index	Day's change	Week's change	Month's change	Series high	Series low
Markit iTraxx						
Crossover 5Y	437.85	-25.21	-25.81	-44.64	688.92	426.04
Europe 5Y	84.29	-4.95	-7.16	-13.45	142.08	81.55
Japan 5Y	76.99	-0.82	0.53	-7.18	119.29	75.61
Senior Financials 5Y	92.60	-4.88	-8.40	-14.47	155.06	89.99
Markit CDX						
Emerging Markets 5Y	236.09	-1.08	-4.30	-6.69	335.29	226.18
Nth Amer High Yld 5Y	466.61	-13.24	-11.87	-25.14	625.47	452.57
Nth Amer Inv Grade 5Y	78.00	-2.52	-2.18	-5.41	110.98	75.62

Websites: markit.com, ftse.com. All indices shown are unhedged. Currencies are shown in brackets after the index names.

VOLATILITY INDICES

	Dec 13	Day Chng	Prev	52 wk high	52 wk low
VIX	23.23	-1.77	25.00	38.93	16.62
VXD	19.57	-1.42	20.99	45.37	3.27
VXN	27.56	-2.50	30.06	44.05	9.94
VDAX	22.39	0.94	21.45	93.30	-

† CBOE. VIX: S&P 500 index Options Volatility, VXD: DJIA Index Options Volatility, VXN: NASDAQ Index Options Volatility. ‡ Deutsche Borse. VDAX: DAX Index Options Volatility.

BONDS: BENCHMARK GOVERNMENT

	Red Date	Coupon	Bid Price	Bid Yield	Day chg yield	Wk chg yield	Month chg yld	Year chg yld
Australia	-	-	-	-	-	-	-	-
	05/32	1.25	82.92	3.38	0.09	0.02	-0.14	-
	02/50	1.00	106.82	1.19	0.08	0.04	-0.23	1.02
Austria	02/29	0.50	89.36	2.37	0.03	0.08	0.02	2.63
	02/47	1.50	83.51	2.41	-0.03	0.01	-0.10	2.09
Belgium	06/27	0.80	94.00	2.21	0.03	0.05	0.01	2.65
	06/47	1.60	81.26	2.65	-0.03	0.02	-0.07	2.04
Canada	03/25	1.25	94.77	3.74	0.04	0.05	-0.08	2.55
	06/30	1.25	89.02	2.90	0.05	0.08	-0.08	1.49
	12/48	2.75	97.18	2.91	0.07	0.05	-0.15	1.11
Denmark	11/29	0.50	89.50	2.15	0.01	0.04	-0.01	2.36
	11/52	0.25	65.39	1.74	-0.03	-0.02	-0.11	1.60
Finland	09/24	0.00	96.19	2.24	0.04	0.09	0.01	2.90
	09/29	0.50	88.19	2.42	0.02	0.07	0.01	2.69
France	05/28	0.75	92.53	2.22	0.02	0.10	0.00	2.55
	05/48	2.00	89.58	2.56	-0.02	0.02	-0.08	2.02
Germany	08/29	0.00	88.29	1.89	0.02	0.07	-0.01	2.37
	08/50	0.00	63.73	1.64	-0.02	0.03	-0.10	1.71
Greece	01/23	3.50	100.25	1.52	-0.05	-0.05	0.16	1.81
	01/28	3.75	102.77	3.16	-0.01	0.09	-0.17	2.46
Ireland	-	-	-	-	-	-	-	-
	05/26	1.00	96.38	2.11	0.03	0.08	-0.01	2.52
	02/45	2.00	90.13	2.59	-0.02	0.05	-0.06	2.10
Italy	02/25	0.35	95.19	2.68	0.05	0.07	-0.05	2.79
	05/30	0.40	92.79	1.43	0.02	0.19	0.03	2.16
	03/48	3.45	93.67	3.84	0.00	0.08	-0.02	2.13
Japan	04/25	0.05	99.92	0.09	0.00	0.01	0.01	0.01
	12/29	0.10	99.17	0.22	0.01	0.01	0.00	0.27
	12/49	0.40	78.54	1.35	0.01	-0.04	-0.06	0.69
Netherlands	07/27	0.75	94.24	2.08	0.03	0.08	0.02	2.58
	01/47	2.75	114.52	1.99	-0.03	0.03	-0.06	2.00
New Zealand	05/31	1.50	81.61	4.11	0.04	0.12	-0.03	1.69
	09/40	2.50	124.65	2.08	0.00	-0.06	-0.18	1.33
Norway	08/30	1.38	90.44	2.77	-0.10	-0.34	-0.38	1.28
Poland	01/23	2.50	99.50	6.90	-0.29	-0.46	-0.40	4.05
	07/27	2.50	83.78	6.70	0.17	-0.23	-0.17	3.45
	04/47	4.00	63.69	7.20	0.00	0.00	-0.35	3.68
Portugal	04/27	4.13	107.34	2.32	0.04	0.10	0.01	2.57
Spain	-	-	-	-	-	-	-	-
	10/29	0.60	87.32	2.64	0.02	0.08	0.00	2.53
	10/46	2.90	96.18	3.13	-0.02	0.02	-0.04	2.14
Sweden	06/30	0.13	117.31	-0.26	0.00	0.00	0.00	1.92
	03/39	3.50	127.05	1.60	-0.01	-0.11	-0.22	1.26
Switzerland	04/28	4.00	115.13	1.06	0.02	0.08	0.07	1.52
	06/29	0.00	93.21	1.08	0.03	0.11	0.09	1.48
United Kingdom	07/23	0.75	98.49	3.28	0.08	0.04	0.09	3.01
	07/27	1.25	91.33	3.29	0.05	0.05	0.01	2.80
	07/47	1.50	64.68	3.70	0.06	0.18	0.19	2.79
United States	-	-	-	-	-	-	-	-
	03/25	0.50	91.87	4.25	0.06	0.01	0.02	3.21
	02/30	1.50	86.52	3.65	0.04	0.00	-0.05	2.23
	02/50	0.25	74.22	1.39	0.01	0.02	-0.25	-

Interactive Data Pricing and Reference Data LLC, an ICE Data Services company.

GILTS: UK CASH MARKET

Dec 13	Price £	Red Yield	Change in Yield Day	Change in Yield Week	Change in Yield Month	Change in Yield Year	52 Week High	52 Week Low	Amnt £m
	-	-	-	-	-	-	-	-	-
Tr 0.75pc '23	98.54	3.21	0.00	2.56	7.00	1237.50	100.76	97.34	34.36
Tr 0.125pc '24	96.27	3.52	0.57	6.67	10.34	802.56	99.36	94.34	35.55
Tr 2pc '25	96.46	3.37	0.60	5.64	8.36	721.95	105.74	93.15	39.93
Tr 0.125pc '26	90.83	3.23	0.62	4.53	1.89	651.16	98.65	86.33	35.32
Tr 1.25pc '27	91.27	3.31	0.91	2.80	-0.90	604.26	104.17	85.65	40.99
Tr 0.875pc '29	85.63	3.23	1.57	3.86	-3.00	466.67	102.19	78.21	43.62
Tr 4.25pc '32	107.93	3.27	1.87	6.51	-2.39	354.17	135.39	98.13	40.33
Tr 4.25pc '36	107.44	3.54	1.43	5.04	-1.39	321.43	145.24	94.91	31.68
Tr 4.5pc '42	110.53	3.75	1.63	6.23	2.18	321.35	168.31	93.79	28.35
Tr 3.75pc '52	100.66	3.71	1.64	7.54	6.61	341.67	177.11	82.51	25.11
Tr 4pc '60	109.05	3.56	2.30	10.22	9.54	394.44	207.32	87.32	25.13

Gilts benchmarks & non-rump undated stocks. Closing mid-price in pounds per £100 nominal of stock.

GILTS: UK FTSE ACTUARIES INDICES

Price Indices Fixed Coupon	Dec 13	Day's chg %	Total Return	Return 1 month	Return 1 year	Yield
1 Up to 5 Years	81.64	-0.04	2348.51	-0.09	-4.89	3.37
2 5 - 10 Years	149.70	-0.31	3185.95	0.71	-14.81	3.28
3 10 - 15 Years	162.07	-0.54	3723.68	0.89	-22.29	3.52
4 5 - 15 Years	151.76	-0.38	3315.02	0.74	-17.20	3.38
5 Over 15 Years	223.68	-1.12	3851.24	-3.06	-41.12	3.65
7 All stocks	138.34	-0.52	3089.78	-0.85	-24.66	3.56

Index Linked	Dec 13	Day's chg %	Month chg %	Year's chg %	Total Return	Return 1 month	Return 1 year
1 Up to 5 Years	324.69	-0.19	-0.42	1.38	2745.53	-0.42	2.54
2 Over 5 years	544.72	-0.95	-7.48	-41.41	4152.00	-7.48	-41.14
3 5-15 years	452.23	-0.62	-2.35	-18.59	3657.54	-2.35	-17.97
4 Over 15 years	614.87	-1.16	-10.76	-50.41	4549.98	-10.76	-50.26
5 All stocks	516.12	-0.82	-6.36	-37.09	4013.29	-6.36	-36.75

Yield Indices	Dec 13	Dec 12	Yr ago		Dec 13	Dec 12	Yr ago
5 Yrs	3.21	3.17	0.43	20 Yrs	3.73	3.68	0.94
10 Yrs	3.40	3.35	0.71	45 Yrs	3.45	3.37	0.60
15 Yrs	3.64	3.59	0.89				

Real yield	inflation 0% Dec 13	Dur yrs	Previous	Yr ago	inflation 5% Dec 13	Dur yrs	Previous	Yr ago
Up to 5 yrs	-0.15	2.78	-0.22	-4.21	-0.46	2.79	-0.53	-4.55
Over 5 yrs	0.39	19.87	0.35	-2.59	0.37	19.92	0.32	-2.61
5-15 yrs	0.16	9.69	0.09	-3.25	0.08	9.70	0.02	-3.33
Over 15 yrs	0.45	26.57	0.41	-2.51	0.44	26.58	0.40	-2.52
All stocks	0.38	17.08	0.33	-2.61	0.35	17.15	0.30	-2.63

See FTSE website for more details www.ftse.com/products/indices/gilts
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COMMODITIES

www.ft.com/commodities

Energy		Price*	Change
Crude Oil†	Jan	73.89	0.72
Brent Crude Oil‡		81.04	3.05
RBOB Gasoline†	Jan	2.11	0.03
Natural Gas†	Jan	6.96	0.38
Base Metals (♠ LME 3 Months)			
Aluminium		2475.00	64.00
Aluminium Alloy		1675.00	-905.00
Copper		8599.00	230.00
Lead		2195.50	11.50
Nickel		29160.00	-215.00
Tin		24540.00	415.00
Zinc		3324.50	57.50
Precious Metals (PM London Fix)			
Gold		1786.60	-9.55
Silver (US cents)		2339.00	28.00
Platinum		1006.00	5.00
Palladium		1895.00	-28.00
Bulk Commodities			
Iron Ore		109.47	-1.01
Richards Bay ICE Futures		229.00	-10.25
Baltic Dry Index		1373.00	33.00

Agricultural & Cattle Futures		Price*	Change
Corn♦	Mar	657.00	3.00
Wheat♦	Mar	762.75	8.00
Soybeans♦	Jan	1468.50	8.00
Soybeans Meal♦	Jan	451.60	1.40
Cocoa (ICE Liffe)✠	Mar	1948.00	17.00
Cocoa (ICE US)♥	Mar	2523.00	21.00
Coffee(Robusta)✠	Jan	1889.00	-14.00
Coffee (Arabica)♥	Mar	168.35	1.30
White Sugar✠		540.90	6.90
Sugar 11♥		19.41	0.03
Cotton♥	Mar	80.79	1.40
Orange Juice♥	Jan	208.50	-0.70
Live Cattle♣	Dec	154.40	0.73
Feeder Cattle♣	May	134.88	-
Lean Hogs♣	Feb	83.88	-0.13

	Dec 12	% Chg Month	% Chg Year
S&P GSCI Spt	598.87	-7.40	10.53
DJ UBS Spot	115.26	-1.46	19.35
TR/CC CRB TR	291.61	-5.40	21.44
LEBA EUA Carbon	58.91	-1.98	129.94
LEBA UK Power	1048.00	-37.43	-39.60

Sources: † NYMEX, ‡ ECX/ICE, ♦ CBOT, ✠ ICE Liffe, ♥ ICE Futures, ♣ CME, ♠ LME/London Metal Exchange.* Latest prices, $ unless otherwise stated.

BONDS: INDEX-LINKED

	Price Dec 12	Yield Dec 12	Yield Prev	Month return	Value stock	Market	No of stocks
Can 4.25%' 26	111.52	1.259	1.218	0.75	5.25	74562.67	8
Fr 0.25%' 24	102.60	-1.332	-1.391	0.18	17.92	261163.02	17
Swe 1.00%' 25	125.73	-0.212	-0.215	0.08	35.38	220003.75	6
UK 0.125%' 24	103.23	-2.357	-2.466	0.15	15.24	573996.36	31
UK 2.50%' 24	377.26	-0.603	-0.687	-0.02	6.82	573996.36	31
UK 2.00%' 35	247.09	0.142	0.067	-2.55	9.08	573996.36	31
US 0.625%' 24	97.87	2.619	2.655	0.01	40.98	1643060.21	47
US 3.625%' 28	110.36	1.592	1.588	-0.10	16.78	1643060.21	47

Representative stocks from each major market Source: Merill Lynch Global Bond Indices † Local currencies. ‡ Total market value. In line with market convention, for UK Gilts inflation factor is applied to price, for other markets it is applied to par amount.

BONDS: TEN YEAR GOVT SPREADS

	Bid Yield	Spread vs Bund	Spread vs T-Bonds
Australia	3.38	1.49	-0.27
Austria	2.37	0.48	-1.28
Canada	2.90	1.01	-0.75
Denmark	2.15	0.26	-1.50
Finland	2.42	0.53	-1.23
Germany	1.89	0.00	-1.76
Italy	1.43	-0.46	-2.22
Japan	0.22	-1.67	-3.43

	Bid Yield	Spread vs Bund	Spread vs T-Bonds
Netherlands	2.08	0.19	-1.57
New Zealand	4.11	2.22	0.46
Norway	2.77	0.89	-0.88
Portugal	2.32	0.44	-1.33
Spain	2.64	0.75	-1.01
Sweden	-0.26	-2.14	-3.91
Switzerland	1.08	-0.80	-2.57
United States	3.65	1.76	0.00

Interactive Data Pricing and Reference Data LLC, an ICE Data Services company.

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MORNINGSTAR®

MANAGED FUNDS SERVICE

abrdn Capital (CI) Limited (JER)
PO Box 189, St Helier, Jersey, JE4 9RU 01534 709130
FCA Recognised
abrdn Capital Offshore Strategy Fund Limited

Fund	Bid	Offer	D+/-	Yield
Bridge Fund	£ 2.1816	-	0.0121	1.91
Global Equity Fund	£ 3.2496	-	0.0298	1.20
Global Fixed Interest Fund	£ 0.7558	-	-0.0003	5.57
Income Fund	£ 0.6293	-	0.0032	3.17
Sterling Fixed Interest Fund	£ 0.6880	-	-0.0048	3.76
UK Equity Fund	£ 1.9626	-	0.0088	3.84

Algebris Investments (IRL)
Regulated

Fund	Bid	Offer	D+/-	Yield
Algebris Financial Credit I EUR	€ 173.86	-	-0.52	0.00
Algebris Financial Credit R EUR	€ 149.56	-	-0.45	0.00
Algebris Financial Credit Rd EUR	€ 91.51	-	-0.28	5.59
Algebris Financial Income I EUR	€ 178.14	-	0.09	-
Algebris Financial Income R EUR	€ 162.06	-	0.07	-
Algebris Financial Income Rd EUR	€ 99.33	-	0.04	-
Algebris Financial Equity B EUR	€ 159.34	-	0.49	0.00
Algebris Financial Equity R EUR	€ 133.97	-	0.40	0.00
Algebris IG Financial Credit I EUR	€ 96.27	-	-0.02	0.00
Algebris IG Financial Credit R EUR	€ 94.78	-	-0.02	0.00
Algebris Global Credit Opportunities I EUR	€ 124.68	-	-0.01	0.00
Algebris Global Credit Opportunities R EUR	€ 121.69	-	-0.01	-
Algebris Global Credit Opportunities Rd EUR	€ 106.98	-	0.00	-
Algebris Core Italy I EUR	€ 142.01	-	-0.02	0.00
Algebris Core Italy R EUR	€ 134.79	-	-0.02	0.00

The Antares European Fund Limited
Other International

Fund	Bid	Offer	D+/-	Yield
AEF Ltd Usd	$ 562.26	-	10.91	0.00
AEF Ltd Eur	€ 518.24	-	10.01	0.00

Artemis Fund Managers Ltd (1200)F (UK)
57 St. James's Street, London SW1A 1LD 0800 092 2051
Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Artemis Corporate Bond I Acc	98.93	-	-0.33	-
Artemis Positive Future Fund	67.01	-	-0.68	-
Artemis Target Return Bond I Acc	104.54	-	-0.09	2.79

Ashmore Group
61 Aldwych, London WC2B 4AE. Dealing team: +352 27 62 22 233
Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Emerging Markets Equity Fund	$ 116.12	-	-0.77	-
Emerging Markets Equity ESG Fund	$ 130.81	-	-0.48	-
Emerging Markets Frontier Equity Fund	$ 177.28	-	-1.38	0.39
Emerging Markets Blended Debt Fund	$ 52.58	-	-0.17	6.26
Emerging Markets Blended Debt ESG Fund	$ 84.26	-	-0.16	0.00
Emerging Markets Active Equity Fund	$ 117.49	-	-1.26	-
Emerging Markets Corporate Debt Fund	$ 59.97	-	0.07	9.48
Emerging Markets Debt Fund	$ 58.05	-	0.01	7.52
Emerging Markets Local Currency Bond Fund	$ 59.58	-	-0.53	4.18

Atlantas Sicav (LUX)
Regulated

Fund	Bid	Offer	D+/-	Yield
American Dynamic	$ 6513.80	-	103.20	-
American One	$ 6691.32	-	63.55	0.00
Bond Global	€ 1581.48	1581.48	10.04	0.00
Eurocroissance	€ 1320.13	-	3.55	-
Far East	$ 1002.99	-	34.00	0.00

Blue Whale Investment Funds ICAV (IRE)
www.bluewhale.co.uk, info@bluewhale.co.uk
FCA Recognised - Ireland UCITS

Fund	Bid	Offer	D+/-	Yield
Blue Whale Growth USD T	$ 8.85	-	0.13	0.00

Brooks Macdonald International Fund Managers Limited (JER)
5 Anley Street, St Helier, Jersey, JE2 3QE
+44 (0) 1534 700 104 (Int.) +44 (0) 800 735 8000 (UK)
Brooks Macdonald International Investment Funds Limited

Fund	Bid	Offer	D+/-	Yield
Euro High Income	€ 1.2333	-	-0.0022	2.50
High Income	£ 0.6632	-	0.0006	3.77
Sterling Bond	£ 1.2679	-	0.0009	2.06

Brooks Macdonald International Multi Strategy Fund Limited

Fund	Bid	Offer	D+/-	Yield
Balanced Strategy A	£ 0.9058	-	-0.0010	0.57
Balanced Strategy	£ 0.9049	-	-0.0010	0.09
Cautious Balanced Strategy A	£ 0.8849	-	0.0007	1.12
Growth Strategy A	£ 0.9046	-	-0.0042	-
High Growth Strategy A	£ 0.8960	-	-0.0031	0.12
Cautious Balanced Strategy	£ 1.2374	-	0.0009	0.00
Growth Strategy	£ 1.8928	-	-0.0087	0.00
High Growth Strategy	£ 2.6273	-	-0.0092	0.00
US$ Growth Strategy	$ 1.6317	-	-0.0005	0.00

Dealing Daily. Initial Charge Nil for A classes and up to 2% for other classes

CG Asset Management Limited (IRL)
25 Moorgate, London, EC2R 6AY
Dealing: Tel. +353 1434 5098 Fax. +353 1542 2859
FCA Recognised
CG Portfolio Fund Plc

Fund	Bid	Offer	D+/-	Yield
Absolute Return Cls M Inc	£ 134.58	135.19	-0.12	1.65
Capital Gearing Portfolio GBP P	£ 37109.10	37313.71	-27.46	-
Capital Gearing Portfolio GBP V	£ 180.48	181.47	-0.14	-
Dollar Fund Cls D Inc	£ 170.16	170.16	4.08	1.20
Dollar Hedged GBP Inc	£ 94.03	94.03	1.59	1.21
Real Return Cls A Inc	£ 200.33	200.93	0.42	1.68

Chartered Asset Management Pte Ltd
Other International Funds

Fund	Bid	Offer	D+/-	Yield
CAM-GTF VCC	$ 284820.86	284820.86	7885.91	-
CAM GTi VCC	$ 780.49	-	-32.39	-
RAIC VCC	$ 1.64	1.64	0.03	2.06

Dodge & Cox Worldwide Funds (IRL)
48-49 Pall Mall, London SW1Y 5JG.
www.dodgeandcox.worldwide.com 020 3713 7664
FCA Recognised
Dodge & Cox Worldwide Funds plc - Global Bond Fund

Fund	Bid	Offer	D+/-	Yield
EUR Accumulating Class	€ 15.82	-	-0.04	0.00
EUR Accumulating Class (H)	€ 10.37	-	-0.02	0.00
EUR Distributing Class	€ 11.60	-	-0.02	0.96
EUR Distributing Class (H)	€ 7.54	-	-0.01	1.01
GBP Distributing Class	£ 12.20	-	-0.04	0.86
GBP Distributing Class (H)	£ 8.07	-	-0.01	1.11
USD Accumulating Class	$ 12.02	-	-0.02	0.00

Dodge & Cox Worldwide Funds plc-Global Stock Fund

Fund	Bid	Offer	D+/-	Yield
USD Accumulating Share Class	$ 28.51	-	0.19	-
GBP Accumulating Share Class	£ 38.21	-	0.20	-
GBP Distributing Share class	£ 25.79	-	0.14	-
EUR Accumulating Share Class	€ 40.64	-	0.25	-
GBP Distributing Class (H)	£ 13.23	-	0.09	0.53

Dodge & Cox Worldwide Funds plc-U.S. Stock Fund

Fund	Bid	Offer	D+/-	Yield
USD Accumulating Share Class	$ 38.24	-	0.53	0.00
GBP Accumulating Share Class	£ 48.47	-	0.61	-
GBP Distributing Share Class	£ 29.09	-	0.36	0.16
EUR Accumulating Share Class	€ 47.06	-	0.62	0.00
GBP Distributing Class (H)	£ 15.18	-	0.21	0.19

Dragon Capital
www.dragoncapital.com
Fund information:info@dragoncapital.com
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Vietnam Equity (UCITS) Fund A USD	$ 25.44	-	0.47	0.00

EdenTree Investment Management Ltd (UK)
PO Box 3733, Swindon, SN4 4BG, 0800 358 3010
Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
EdenTree Short Dated Bond Cls B	93.19	-	-0.22	-

Euronova Asset Management UK LLP (CYM)
Regulated

Fund	Bid	Offer	D+/-	Yield
Smaller Cos Cls One Shares	€ 51.74	-	-0.11	0.00
Smaller Cos Cls Two Shares	€ 33.03	-	-0.07	0.00
Smaller Cos Cls Three Shares	€ 16.48	-	-0.04	0.00
Smaller Cos Cls Four Shares	€ 21.73	-	-0.04	0.00

Fidelity Investments International
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Emerging Mkts NAV	£ 7.21	-	-0.16	1.91

FIL Investment Services (UK) Limited (1200)F (UK)
Beech Gate, Millfield Lane, Lower Kingswood, Tadworth, KT20 6RP
Callfree: Private Clients 0800 414161
Broker Dealings: 0800 414 181
OEIC Funds

Fund	Bid	Offer	D+/-	Yield
Index Sterling Corporate Bond Fund P-ACC-GBP	£ 0.84	-	0.00	-
Sustainable Multi Asset Balanced Fund W-ACC-GBP	£ 0.92	-	0.00	1.57
American Fund W-ACC-GBP	£ 50.43	-	-0.43	0.00
Cash Fund W-ACC-GBP	£ 1.03	-	0.00	-
Emerg Europe, Middle East and Africa Fund W-ACC-GBP	£ 1.59	-	-0.02	4.60
Sustainable Global Equity Fund W-ACC-GBP	£ 32.05	-	-0.22	0.00
Global High Yield Fund W-ACC-GBP	£ 13.75	-	0.03	5.65
Japan Fund W-ACC-GBP	£ 5.38	-	-0.06	-
Japan Smaller Companies Fund W-ACC-GBP	£ 3.44	-	-0.03	-
Select 50 Balanced Fund PI-ACC-GBP	£ 1.12	-	0.00	-
Special Situations Fund W-ACC-GBP	£ 41.65	-	-0.08	1.97
Short Dated Corporate Bond Fund W-ACC-GBP	£ 10.49	-	0.03	-
Sustainable Water & Waste W-ACC-GBP	£ 1.11	-	-0.01	-
Sustainable Water & Waste W-INC-GBP	£ 1.10	-	-0.01	0.14
UK Select Fund W-ACC-GBP	£ 3.60	-	-0.01	-
Global Enhanced Income W-ACC-GBP	£ 2.28	-	-0.01	-
Index UK Gilt Fund P-ACC-GBP	£ 0.77	-	0.00	0.58
Sustainable Multi Asset Conservative Fund W-ACC-GBP	£ 0.89	-	0.00	1.70
Sustainable Multi Asset Growth Fund W-ACC-GBP	£ 0.94	-	0.00	-

Findlay Park Funds Plc (IRL)
30 Herbert Street, Dublin 2, Ireland Tel: 020 7968 4900
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
American EUR Unhedged Class	€ 153.79	-	2.26	-
American Fund USD Class	$ 161.81	-	2.09	-
American Fund GBP Hedged	£ 79.45	-	1.03	0.00
American Fund GBP Unhedged	£ 132.04	-	2.13	-

Foord Asset Management
Website: www.foord.com - Email: info@foord.com
FCA Recognised - Luxembourg UCITS

Fund	Bid	Offer	D+/-	Yield
Foord International Fund | R	$ 49.82	-	-0.16	0.00
Foord Global Equity Fund (Lux) | R	$ 16.11	-	0.02	0.00

Regulated

Fund	Bid	Offer	D+/-	Yield
Foord Global Equity Fund (Sing) | B	$ 19.19	-	0.01	0.00
Foord International Trust (Gsy)	$ 48.55	-	-0.16	0.00

GAM
funds@gam.com, www.funds.gam.com
Regulated

Fund	Bid	Offer	D+/-	Yield
LAPIS GBL TOP 50 DIV.YLD-Na-D	£ 124.87	-	1.42	-
LAPIS GBL F OWD 50 DIV.YLD-Na-D	£ 99.37	-	0.04	-

Guinness Global Investors

Fund	Bid	Offer	D+/-	Yield
Guinness Global Equity Income Y GBP Dist	£ 18.65	-	0.15	2.22
Guinness Global Innovators Y GBP Acc	£ 24.80	-	0.40	-
Guinness Sustainable Global Equity Y GBP Acc	£ 11.05	-	0.17	0.00

HPB Assurance Ltd
Anglo Intl House, Bank Hill, Douglas, Isle of Man, IM1 4LN 01638 563490
International Insurances

Fund	Bid	Offer	D+/-	Yield
Holiday Property Bond Ser 1	£ 0.48	-	0.00	0.00
Holiday Property Bond Ser 2	£ 0.63	-	0.00	0.00

Janus Henderson Investors (UK)
PO Box 9023, Chelmsford, CM99 2WB Enquiries: 0800 832 832
www.janushenderson.com
Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
Janus Henderson Instl UK Idx Opps A Acc	£ 1.11	-	0.00	2.91

M & G Securities (1200)F (UK)
PO Box 9038, Chelmsford, CM99 2XF
www.mandg.co.uk/charities Enq./Dealing: 0800 917 4472
Authorised Inv Funds

Fund	Bid	Offer	D+/-	Yield
M&G Charibond Charities Fixed Interest Fund (Charibond) Inc	£ 1.10	-	-0.01	1.99
M&G Charibond Charities Fixed Interest Fund (Charibond) Acc	£ 39.20	-	-0.25	1.61
M&G Charity Multi Asset Fund Inc	£ 0.88	-	0.00	-
M&G Charity Multi Asset Fund Acc	£ 105.61	-	0.39	-

MMIP Investment Management Limited (GSY)
Regulated
Multi-Manager Investment Programmes PCC Limited

Fund	Bid	Offer	D+/-	Yield
UK Equity Fd Cl A Series 01	£ 2810.68	2842.19	142.84	0.00
Diversified Absolute Rtn Fd USD Cl AF2	$ 1588.98	-	5.05	-
Diversified Absolute Return Stlg Cell AF2	£ 1474.75	-	6.33	-
Global Equity Fund A Lead Series	£ 1721.66	1727.57	67.75	-

Marwyn Asset Management Limited (CYM)
Regulated

Fund	Bid	Offer	D+/-	Yield
Marwyn Value Investors	£ 329.72	-	-6.14	0.00

Milltrust International Managed Investments ICAV (IRL)
mimi@milltrust.com, +44(0)20 8123 8316 www.milltrust.com
Regulated

Fund	Bid	Offer	D+/-	Yield
British Innovation Fund	£ 121.92	-	2.89	0.00
MAI - Buy & Lease (Australia)	A$ 103.45	-	0.50	0.00
MAI - Buy & Lease (New Zealand)	NZ$ 91.20	-	-6.06	0.00
Milltrust Global Emerging Markets Fund - Class A	$ 94.57	-	0.37	0.00

Milltrust International Managed Investments SPC
em@milltrust.com, +44(0)20 8123 8316, www.milltrust.com
Regulated

Fund	Bid	Offer	D+/-	Yield
Milltrust Alaska Brazil SP A	$ 74.55	-	-3.09	0.00
Milltrust Laurium Africa SP A	$ 101.55	-	-1.66	0.00
Milltrust Marcellus India Fund	$ 127.71	-	-1.15	0.00
Milltrust Singular ASEAN SP Founders	$ 129.53	-	0.04	0.00
Milltrust SPARX Korea Equity SP A	$ 99.63	-	-1.13	0.00
Milltrust Xingtai China SP A	$ 101.65	-	-2.37	0.00
The Climate Impact Asia Fund SP (Class A)	$ 76.47	-	-1.11	0.00
The Climate Impact Asia Fund (Class B)	$ 75.85	-	-1.10	0.00

Mirabaud Asset Management (LUX)
www.mirabaud.com, marketing@mirabaud-am.com
Conviction based investment vehicles details available here www.mirabaud-am.com
Regulated

Fund	Bid	Offer	D+/-	Yield
Mir. - Glb Strat. Bd I USD	$ 116.08	-	-0.06	-
Mir. - DiscEur D Cap GBP	£ 160.04	-	-0.81	-
Mir. - UKEq HA Cap I GBP	£ 134.74	-	-1.02	0.00

Oasis Crescent Global Investment Funds (UK) ICVC (UK)
Regulated

Fund	Bid	Offer	D+/-	Yield
Oasis Crescent Global Equity Fund USD A (Dist)	$ 34.79	-	0.88	0.24
Oasis Crescent Global Income Fund USD A (Dist)	$ 10.06	-	0.00	2.72
Oasis Crescent Global Low Equity Fund USD D (Dist)	$ 12.29	-	0.08	0.59
Oasis Crescent Global Medium Equity Fund USD A (Dist)	$ 13.62	-	0.09	0.14
Oasis Crescent Global Property Equity Fund USD A (Dist)	$ 7.68	-	-0.01	0.93
Oasis Crescent Global Short Term Income Fund USD A (Dist)	$ 0.94	-	0.00	1.88
Oasis Crescent Variable Fund GBP A (Dist)	£ 9.62	-	0.00	0.17

Omnia Fund Ltd
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Estimated NAV	$ 936.92	-	-9.18	0.00

Orbis Investments (U.K.) Limited (GBR)
28 Dorset Square, London, NW1 6QG
www.orbis.com 0800 358 2030
Regulated

Fund	Bid	Offer	D+/-	Yield
Orbis OEIC Global Cautious Standard	£ 11.70	-	0.01	-
Orbis OEIC Global Balanced Standard	£ 18.90	-	0.04	-
Orbis OEIC Global Equity Standard	£ 21.14	-	0.09	-
Orbis OEIC UK Equity Standard	£ 11.17	-	-0.02	3.21

Platinum Capital Management Ltd
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Platinum All Star Fund - A	$ 141.55	-	-	-
Platinum Global Growth UCITS Fund	$ 7.92	-	-0.07	0.00
Platinum Essential Resources UCITS Fund SICAV USD Class E	$ 10.98	-	-0.18	0.00
Platinum Global Dividend UCITS Fund	$ 47.18	-	-0.34	0.00

Polar Capital Funds Plc (IRL)
Regulated

Fund	Bid	Offer	D+/-	Yield
Automation & Artificial Intelligence CL I USD Acc	$ 14.49	14.49	0.06	-
Asian Starts I USD Acc $	$ 14.31	-	-0.25	0.00
Biotechnology I USD	$ 38.86	38.86	0.81	0.00
China Stars I USD Acc $	$ 11.32	11.32	-0.20	0.00
Emerging Market Stars I USD Acc	$ 11.21	-	-0.21	-
European Ex UK Inc EUR Acc	€ 14.09	14.09	-0.08	0.00
Financial Opps I USD	$ 13.73	-	0.08	2.56
Global Convertible I USD	$ 13.71	13.71	0.08	0.00
Global Insurance I GBP	£ 10.05	-	0.06	0.00
Global Technology I USD	$ 62.57	-	0.82	0.00
Healthcare Blue Chip Fund I USD Acc	$ 18.59	18.59	0.16	0.00
Healthcare Dis I Acc USD $	$ 11.90	-	0.14	0.00
Healthcare Opps I USD	$ 65.10	-	0.64	0.00
Income Opportunities B2 I GBP Acc	£ 2.91	2.91	0.00	0.00
Japan Value I JPY	¥ 141.09	141.09	0.71	0.00
North American I USD	$ 32.36	32.36	0.47	0.00
Smart Energy I USD Acc $	$ 9.11	9.11	0.04	0.00
Smart Mobility I USD Acc $	$ 8.51	8.51	0.04	0.00
UK Val Opp I GBP Acc	£ 11.92	11.92	0.07	0.00

Private Fund Mgrs (Guernsey) Ltd (GSY)
Regulated

Fund	Bid	Offer	D+/-	Yield
Monument Growth 06/12/2022	£ 545.40	550.74	-0.29	1.06

Prusik Investment Management LLP (IRL)
Enquiries - 0207 493 1331
Regulated

Fund	Bid	Offer	D+/-	Yield
Prusik Asian Equity Income B Dist	$ 178.34	-	1.33	4.58
Prusik Asia Emerging Opportunities Fund A Acc	$ 182.37	-	0.12	0.00
Prusik Asia Fund U Dist.	£ 209.30	-	-0.19	-
Prusik Asia Sustainable Growth Fund A Acc	$ 88.04	-	-0.15	-

Purisima Investment Fds (CI) Ltd (JER)
Regulated

Fund	Bid	Offer	D+/-	Yield
PCG B ✠	274.55	-	-1.57	0.00
PCG C ✠	267.07	-	-1.53	0.00

Ram Active Investments SA
www.ram-ai.com
Other International Funds

Fund	Bid	Offer	D+/-	Yield
RAM Systematic Emerg Markets Eq	$ 210.76	210.76	-2.09	-
RAM Systematic European Eq	€ 511.16	511.16	-3.03	-
RAM Systematic Funds Global Sustainable Income Eq	$ 148.22	148.22	0.24	0.00
RAM Systematic Global Eq Sustainable Alpha	$ 110.77	110.77	0.22	-
RAM Systematic Long/Short European Eq	€ 152.77	152.77	-0.27	-
RAM Systematic US Sustainable Eq	$ 343.79	343.79	4.39	-
RAM Tactical Global Bond Total Return	€ 138.77	138.77	-0.10	-
RAM Tactical II Asia Bond Total Return	$ 143.17	143.17	-0.06	-

Ruffer LLP (1000)F (UK)
65 Gresham Street, London, EC2V 7NQ
Order Desk and Enquiries: 0345 601 9610
Authorised Inv Funds
Authorised Corporate Director - Link Fund Solutions

Fund	Bid	Offer	D+/-	Yield
LF Ruffer Diversified Rtrn C Acc	105.00	-	-0.50	0.86
LF Ruffer Diversified Rtrn C Inc	104.12	-	-0.50	0.95
LF Ruffer European C Acc	765.58	-	2.11	0.82
LF Ruffer European C Inc	137.34	-	0.38	-
LF Ruffer Equity & General C Acc	557.38	-	-6.38	0.78
LF Ruffer Equity & General C Inc	503.57	-	-5.77	0.79
LF Ruffer Gold C Acc	221.94	-	1.79	0.00
LF Ruffer Gold C Inc	134.33	-	1.09	-
LF Ruffer Japanese C Inc	157.08	-	-3.01	0.25
LF Ruffer Japanese C Acc	338.40	-	-6.49	0.25
LF Ruffer Total Return C Acc	572.90	-	2.43	2.40
LF Ruffer Total Return C Inc	357.29	-	1.52	2.45

Rubrics Global UCITS Funds Plc (IRL)
www.rubricsam.com
Regulated

Fund	Bid	Offer	D+/-	Yield
Rubrics Emerging Markets Fixed Income UCITS Fund	$ 132.27	-	-0.51	-
Rubrics Global Credit UCITS Fund	$ 16.58	-	-0.01	-
Rubrics Global Fixed Income UCITS Fund	$ 169.59	-	-0.26	-

Slater Investments Ltd (UK)
www.slaterinvestments.com; Tel: 0207 220 9460
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Slater Growth A Acc	634.25	634.25	0.24	0.00
Slater Income A Inc	140.10	140.10	0.29	5.22
Slater Recovery A Acc	330.62	330.62	-0.15	0.00
Slater Artorius	289.18	289.18	-0.59	0.00

Stonehage Fleming Investment Management Ltd (IRL)
www.stonehagefleming.com/gbi
enquiries@stonehagefleming.com
Regulated

Fund	Bid	Offer	D+/-	Yield
SF Global Best Ideas Eq B USD ACC	$ 222.40	-	1.98	-
SF Global Best Ideas Eq D GBP INC	£ 275.37	-	3.33	-

Superfund Asset Management GmbH
www.superfund.com, +43 (1) 247 00
Other International Funds
Other International Funds

Fund	Bid	Offer	D+/-	Yield
Superfund Green Gold	$ 1193.43	-	-17.69	0.00
Superfund Green Silver	$ 1096.15	-	-19.84	0.00

Regulated

Fund	Bid	Offer	D+/-	Yield
Superfund Green US$	$ 948.70	-	-4.12	0.00

Toscafund Asset Management LLP (UK)
www.toscafund.com
Authorised Funds

Fund	Bid	Offer	D+/-	Yield
Aptus Global Financials B Acc	£ 4.69	-	-0.03	4.03
Aptus Global Financials B Inc	£ 3.03	-	-0.02	4.51

Toscafund Asset Management LLP
www.toscafund.com

Fund	Bid	Offer	D+/-	Yield
Tosca A USD	$ 406.01	-	8.84	0.00
Tosca Mid Cap GBP	£ 174.84	-	4.39	0.00
Tosca Opportunity B USD	$ 267.84	-	6.72	0.00
Pegasus Fund Ltd A-1 GBP	£ 41.68	-	1.06	0.00

Troy Asset Mgt (1200) (UK)
65 Gresham Street, London, EC2V 7NQ
Order Desk and Enquiries: 0345 608 0950
Authorised Inv Funds
Authorised Corporate Director - Link Fund Solutions
Trojan Investment Funds

Fund	Bid	Offer	D+/-	Yield
Trojan Ethical O Acc	125.04	-	0.18	0.00
Trojan Ethical Global Inc O Acc	101.92	-	0.85	2.54
Trojan Ethical Global Inc O Inc	99.39	-	0.83	2.56
Trojan Ethical O Inc	124.79	-	0.18	0.00

Zadig Gestion (Memnon Fund) (LUX)
FCA Recognised

Fund	Bid	Offer	D+/-	Yield
Memnon European Fund - Class U2 GBP	£ 233.72	-	-0.66	0.00

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Different share classes are issued to reflect a different currency, charging structure or type of holder.

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Buying price: Also called offer price. The price at which units in a unit trust are bought by investors. Includes manager's initial charge.

Single price: Based on a mid-market valuation of the underlying investments. The buying and selling price for shares of an OEIC and units of a single priced unit trust are the same.

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The symbols are as follows: ✠ 0001 to 1100 hours; ◆ 1101 to 1400 hours; ▲ 1401 to 1700 hours; # 1701 to midnight. Daily dealing prices are set on the basis of the valuation point, a short period of time may elapse before prices become available. Historic pricing: The letter H denotes that the managers/operators will normally deal on the price set at the most recent valuation. The prices shown are the latest available before publication and may not be the current dealing levels because of an intervening portfolio revaluation or a switch to a forward pricing basis. The managers/operators must deal at a forward price on request, and may move to forward pricing at any time. Forward pricing: The letter F denotes that that managers/operators deal at the price to be set at the next valuation.

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ARTS

Bric-a-brac brought to life by memory and loss

Theaster Gates creates a poetic display from his own work and apparently random objects in a New York show, writes Ariella Budick

Theaster Gates has recently returned to making ceramics, and the results form part of the exhibition — Dario Lasagni

In Theaster Gates's ideal world, all our homes would be museums. "The everyday person should be able to say: 'I have some things I think are important . . . I would like you to see them.'" In reality, a totally democratised network of domestic museums would probably devolve into a nightmare of knick-knacks, but Gates's vision applies nicely . . . to himself. He is a virtuoso accumulator, cataloguer and organiser, as well as artist. The things that he would like you to see throng New York's New Museum in a promiscuous mixture of art, anthropology, natural history, folk and cryptic clues to his own psyche.

His creations mingle in a crowd of items whose meanings remain obscure but that resonate in poetic ways with his past or with people he has loved. Many of these objects — a metal bell, an old earthenware storage jar, a single rubber boot coated in acrylic paint — bear no relation to one another except through Gates's sensibility. That's a powerful binder, though. He manages to imbue seemingly mundane objects with nostalgic beauty and communicate that radiance to the public, even when its code remains opaque.

The mid-career show *Young Lords and Their Traces* takes the first part of its name from the street gang that started out in Gates's hometown of Chicago in the 1960s and evolved into a constructive civil rights organisation. The rest of the title is more complicated.

"Their" refers to the artist's private pantheon, which includes his father Theaster Gates Sr, a roofer and builder; the painter Sam Gilliam; curator Okwui Enwezor; activist and scholar bell hooks; and ceramicist Marva Lee Pitchford-Jolly. The exhibition functions as a group memorial to vanished heroes whose legacy can still be touched and weighed.

"I wanted to figure out a way to think about 'traces' as the raw material for new creativity," Gates tells curator Massimiliano Gioni in a catalogue interview. "Those traces now inform my practice in one way or another." This generative energy powers Gates's show. Memory, grief, the void left by loss — in his hands these qualities of absence give solid objects their elegiac aura.

Gates's archival bent goes way back. Born in Chicago, he has the city in his bones. It supplies his work with its thrust, key and message. He started out buying and refurbishing dying buildings on Chicago's South Side, knocking them into shape for community use. Though not an architect, he treats real estate as an artistic medium, having repurposed more than 40 structures into affordable homes and abodes for his idiosyncratic stockpiles. (He also designed last summer's Serpentine Pavilion in London, with the help of David Adjaye.)

In 2015, he rescued a derelict savings and loan building and reopened it as the Stony Island Arts Bank, which shelters, among other treasures, the record collections of house music pioneer Frankie Knuckles and Olympian Jesse Owens (who became a DJ when he retired from running), 60,000 glass lantern slides of artworks from the University of Chicago's art history department library and the photographic archives of Ebony and Jet magazines.

The spirit of accretion permeates the show. One freestanding bookshelf holds 4,500 volumes that belonged to the late Slavic studies scholar Robert Bird. A few feet away is "Sweet Chariot" (2012), a tar kettle that Gates acquired from his dad. The bookshelf is a compendium of one man's painstakingly assembled knowledge, the old machine a monument to another man's years of work. Gates displays that beat-up apparatus as "a memorial to the history of labour and the ways in which labour is a beautiful, spiritual way of transmitting energy".

A deep current runs between those two seemingly incongruous presences: the patient accumulation of experience and expertise. "You will ask, and exhibition goers will also wonder: What is this meeting?" Bird's widow Christina Kiaer wrote in a letter to her dead husband. "What is my library of Russian literature, cinema and philosophy doing here, in the midst of Theaster's Black aesthetic space? I think you know the answer: it's the care for the archive and its heavy weight of histories and knowledges, as well as its promise, that animates you both." In another context, that link might seem tenuous; here, the sincerity of Gates's encyclopedic tendencies gives it genuine heft.

Another floor is given over to items that hold meaning for Gates because of who owned them and how they made their way to him. A pair of sneakers designed by Virgil Abloh, a red brick from the 1870s, marked by its maker's handprint — Gates gathers these artefacts in wooden vitrines rescued from the Oriental Institute at the University of Chicago.

The result is a museum of associations, organised according to rubrics of emotion. He believes that memories inhere in inanimate objects, and even if the rest of us can't read them, we can sense their tingle. The show flirts with mysticism here, since that vague electricity is all that unites what is otherwise an artfully displayed mass of bric-a-brac. But what else do museums have to offer than inert leftovers whose meanings must be sensed before they can be explained?

Gates leaves his own creations until late in the itinerary, and they are worth the wait. He has recently returned to his early training as a ceramicist, and those clay vessels are by far his most compelling works. Toggling between tool and totem, they contain nothing but their own spiritual potential. Clay, a substance that links the ancient to the modern, becomes, for Gates, a transcendent material, as he explains: "By using the wheel, slab, coil and the atmosphere of kilns, I can create objects made for the eternal as much as they are made for tea."

> The artist manages to imbue seemingly mundane objects with nostalgic beauty

The Wunderkammer developed in the 16th century as a compendium of the human mind and natural world. Gates expands on that old model, turning the New Museum into a cabinet devoted to his own curiosity. In his practice, making and having are not separate activities, but complementary tools in the same open-ended exploration.

To February 5, newmuseum.org

Shelves of archives and Gates's father's tar kettle are among the items on display at the New Museum
Dario Lasagni

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Steam power in the palm of your hand

GAMING
Tom Faber

I'm not the gamer I once was. Over the past year, my gaming habits have undergone a fundamental shift. Where once I'd spend my play time parked on the sofa submerged in the blue-white glow of the TV, these days I'm more often to be found in odd nooks of the house or outdoors, playing games in the palm of my hand. This is all thanks to a new device in my life: the Steam Deck.

This portable gaming PC, which was released at the beginning of the year, has finished the job started by the Nintendo Switch in 2017 — and it has revolutionised handheld gaming. Though portable devices were pillars of gaming through the 1990s and 2000s, the arrival of the smartphone seemed to spell the end of that era — why have a separate machine for games when you can play them on your phone? A decade later, everything has changed. Handhelds are in the ascendant once more. At least six companies have announced or released portable consoles this year alone. But why are people choosing handhelds over powerful smartphones or home consoles? And what does this tell us about the future of media consumption?

The first Game Boy in 1989 was a revelation: it set games free. Now you could decide what and where you wanted to play. It only had two main buttons and a black-and-green screen, but it was enough — you could play *Super Mario Land* or *Tetris* while taking the bus to school and nothing would ever be more magical than that. Sony put out two sleek and appealing handheld consoles, the PSP (2004) and the Vita (2011), but when the latter flopped it retreated from the handheld market.

Nintendo had more success with the DS, a bizarre device that had a hinge, two screens and could be played by blowing into a microphone. It was the epitome of the whimsical hardware innovations that continue to distinguish the company today. This year's retro Playdate console, which can be controlled using a windable crank, is a throwback to that era.

With the advent of powerful smartphones around 2010, it looked as though handheld games consoles would be usurped. Yet the early promise of mobile games has still yet to be delivered. Mobile games pull in more profit than PC and console games (though their market shrank this year), but have never developed a reputation for offering quality gaming experiences because the predominant free-to-play business model encourages the creation of shallow and money-hungry games. Meanwhile, many gamers lament the lack of buttons — touchscreens do not suit many genres — and the fact that notifications can interrupt their sacred game time. Rather than replacing handheld consoles, phones created an adjacent market for casual players.

> In the era of cloud gaming and streaming, we are becoming hardware agnostic

It took the Nintendo Switch in 2017 to redefine handheld gaming. It offered a hybrid console that could be played on-the-go or inserted into a dock and played on TVs at home. The established boundary between blockbuster home-console games and more basic handheld ones crumbled: now Nintendo's top talent was making ambitious games such as *Super Mario Odyssey* and *The Legend of Zelda: Breath of the Wild* which could be played anywhere.

The Switch was innovative, but its hardware is weak by today's standards and only operates within Nintendo's closed ecosystem. This year's Steam Deck remedies these issues by offering a portable (albeit bulky) gaming PC, powerful enough to play *Elden Ring*. It is also radically open — you can use it to access the entirety of your existing PC game library, emulate older consoles and even use Netflix or Xbox Game Pass.

Now Logitech and Razer, two hardware manufacturers with strong gaming pedigrees, are planning to enter the handheld market with devices intended for cloud gaming, meaning gameplay is processed on a distant computer and you simply stream the results. These developments are indicative of a growing consumer expectation that our media should be seamlessly available on whatever device we have to hand. We are becoming hardware agnostic.

Even at home with my TV available, I find myself drawn to the smaller screen. I find it soothing that I can curl up on the couch and play a game while my housemates watch TV, knowing that I'm not dominating the room with gunshots and blood spatter. If we're going to spend a portion of our free time alone, buried in our screens, then at least we might be alone together.

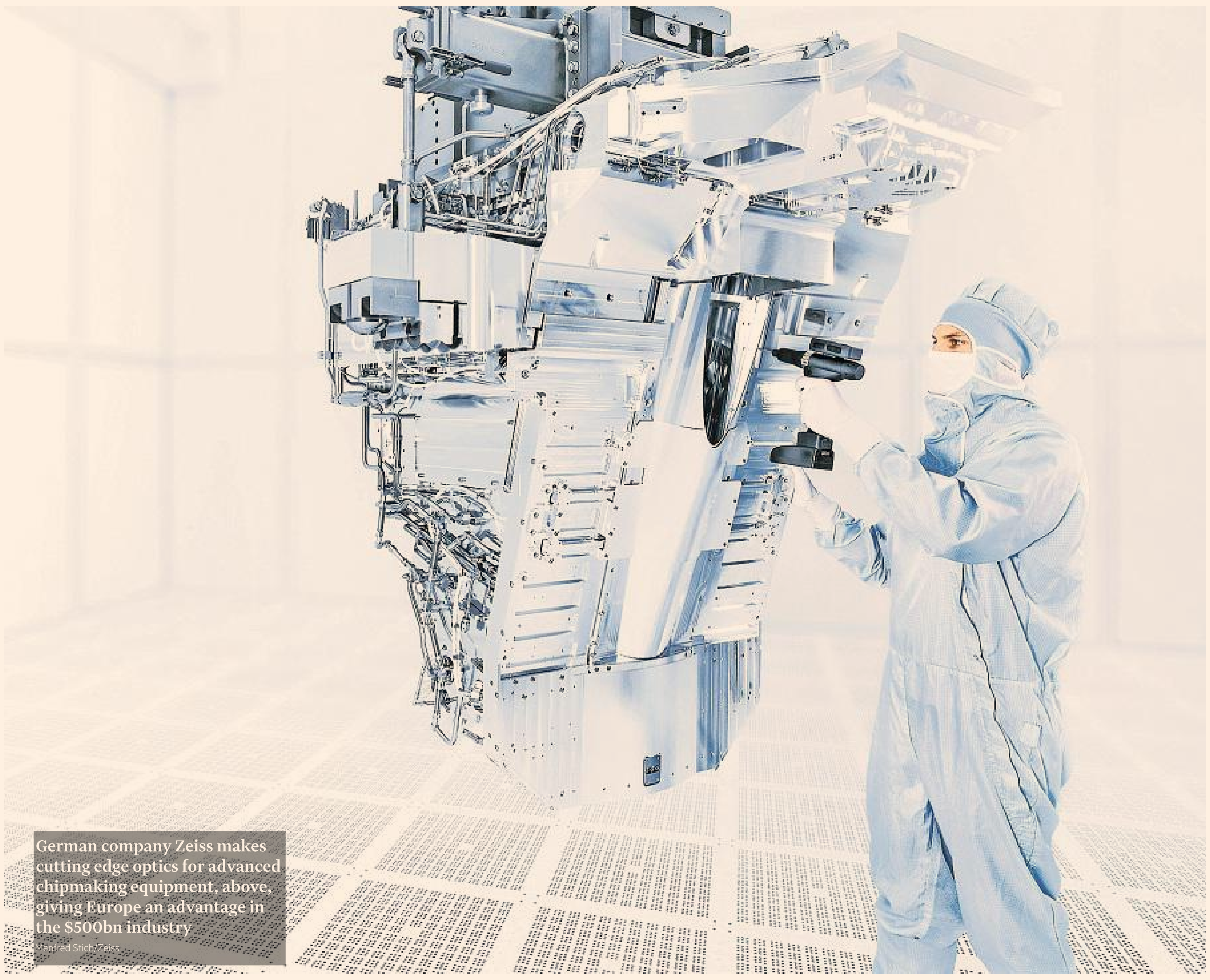
A gamer plays 'Hollow Knight' on a Steam Deck console

FT BIG READ. SEMICONDUCTOR INDUSTRY

Europe's bid to compete on chips

The region has advantages in the race to develop the world's most advanced microchips, but it must overcome a shortfall of investment, an inconstant supply of chemicals and skilled labour shortages.

By Lauly Li



German company Zeiss makes cutting edge optics for advanced chipmaking equipment, above, giving Europe an advantage in the $500bn industry
Manfred Stich/Zeiss

On the edge of a tranquil forest an hour's drive from Stuttgart, where hiking trails snake through the trees and across gently rolling hills, sits one of Europe's secret weapons in the global race to develop the world's most advanced semiconductors.

Oberkochen, a small town of just 8,000 people in the south-western state of Baden-Württemberg, is headquarters to Carl Zeiss SMT, the only manufacturer of the mirrors and lenses used in the world's most advanced chipmaking equipment. Its ultra-precise mirrors and lenses are so accurate that they are capable of a precision 200 times greater than the James Webb Space Telescope.

Zeiss has "a unique competence", says Peter Wennink, chief executive of ASML, the Netherlands-based company that holds a global monopoly on manufacture of the extreme ultraviolet lithography (EUV) machines required to make cutting edge chips — and is one of its most important customers.

Without Zeiss optics, he says ASML could not make its EUV machines, which use ultraviolet light to scan chip designs on to silicon wafers at a tiny scale. And without ASML machines, it would be impossible to make the most advanced chips needed for future technologies such as artificial intelligence, autonomous driving and quantum computing.

Advanced chipmaking equipment is one of Europe's hidden strengths as countries around the world try to capture a share of an industry which is at the centre of the modern economy and which is becoming increasingly laced with geopolitical risk.

The semiconductor market exceeded $500bn for the first time in 2021 and is estimated to become a trillion-dollar industry by 2030, according to McKinsey.

Taiwan is the global centre for the most advanced chipmaking. In terms of semiconductors below 10 nanometres — the leading-edge versions of the technology — Taiwan holds more than 90 per cent of global market share.

But growing fears about some form of Chinese military intervention in Taiwan has prompted governments from the US, Japan and many across Europe to rush to incentivise expansion of chip production in their countries, raising concerns that too much capacity will be coming on stream at the same time.

For many countries, semiconductors are a matter of national security as large swaths of the economy increasingly rely on the functionality they provide. Severe shortages during the pandemic have hit production in a wide range of global industries from smartphones and personal computers to servers and automobiles.

Europe is determined not to be left behind as this contest gathers pace. Earlier this year, the European Commission unveiled a plan to invest €43bn in an effort to tempt the world's biggest chipmakers to set up factories in the bloc. Intel, the US chip giant, has pledged an initial investment of €33bn in the bloc, including €17bn for a mega-site in Germany. European chipmakers like STMicroelectronics and Infineon are also expanding their facilities in Europe. The EU is also trying to lure TSMC, the world's biggest contract chipmaker, to set up large-scale operations in the bloc.

Brussels hopes the investments will double the EU's share of the global semiconductor market from less than 10 per cent today to 20 per cent by 2030. But more important than market share is to reduce the EU's dependence on producers in Asia such as TSMC and Samsung at a time when east-west tensions could pose a potential threat to supply.

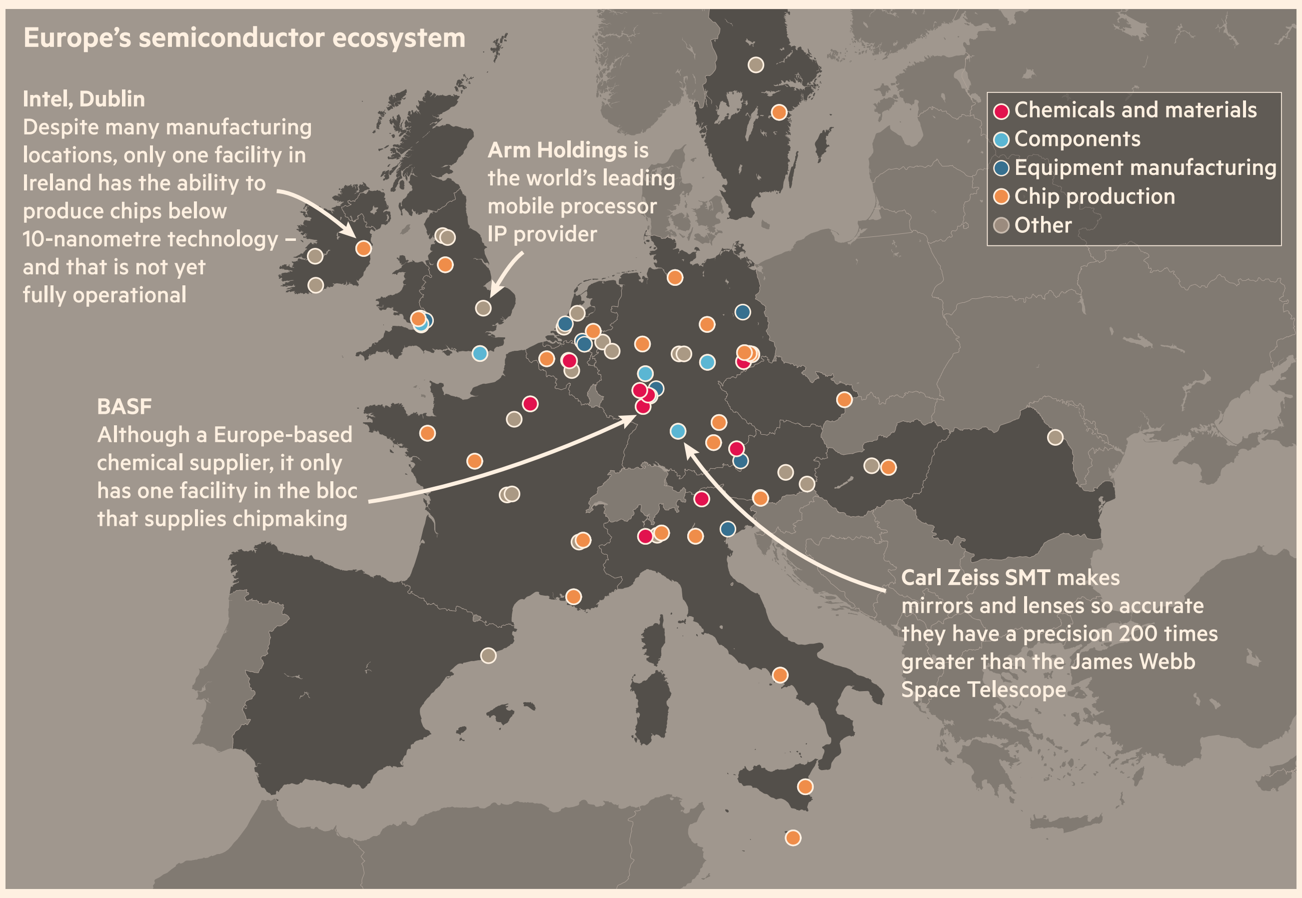
There are at least 81 new chip facilities to be built between 2021 and 2025; 10 will be built in Europe, compared with 14 in the US and 21 in Taiwan, according to the most recent data in September from SEMI, a US-based semiconductor industry organisation.

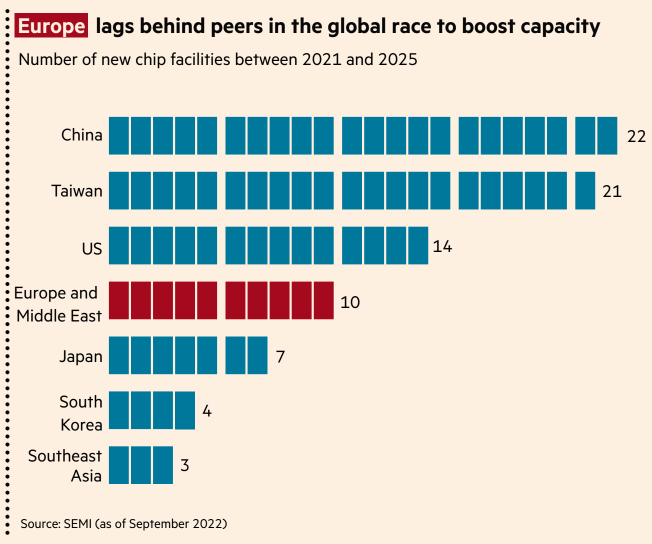
Together with the continent's solid foundations in chemicals and materials, companies such as Carl Zeiss SMT and ASML and their supply chains will be fundamental to Europe's ambition to become one of the world's most important suppliers of the highest-end chips.

But important gaps remain in Europe's semiconductor push. The amounts of capital required are formidable. And the companies that are looking to supply the chip factories warn that there are not enough skilled workers to keep their plants humming.

"Whether we could reach 20 per cent market share by 2030 is a question mark, but there is increasing pressure because not doing anything will make the situation even worse," says Lars Reger, chief technology officer at NXP Semiconductor, the Netherlands-based company.

"It's all about relevancy," said Wennink at ASML. "You have to stay relevant in the geopolitical context."





> 'Europe did retain real strength over the years in semiconductor manufacturing equipment. That has given it a chance'

Europe's ambitious plan for microchips, which is built around the European Chips Act, has not been met with universal approval.

Some critics, including industry executives, have suggested that Europe was wasting taxpayers' money. Far better, they argue, would be to spend the money on expanding capacity of the mature chip technologies that are consumed by Europe's own industries — such as automotive and industrial applications — rather than face the enormous costs of trying to develop the newest chips. The decline of Europe's mobile phone industry had left the continent without obvious customers for advanced chips.

As the cost of producing more and more complex chips has escalated, "fewer companies were able to keep up", says one chip company executive. "Many of those that dropped out of the race were in Europe."

That has left Europe's supply chain without some of the key capabilities needed for advanced semiconductor manufacturing. Yang Wang, senior analyst in London with consultancy Counterpoint Research, points out that there are no chip designers in Europe who work in 7 nanometre and below nodes versions of the technology.

"None of the world's top 10 chip designers are based in Europe while the US leads the world in semiconductor designs," he says.

Funding is also a crucial factor. The more advanced the chip being made, the more capital-intensive is the process. For example, TSMC's capital expenditure for 2022 will be $36bn, and this month the company announced plans to triple its investment in Arizona from $12bn to $40bn in the coming years, where it will also bring the more advanced 3nm technology by 2026.

The US this year passed its own Chips and Science Act, a $52.7bn package of incentives and tax breaks.

Building a supply chain as complicated as the one required for the most advanced chip technology will take years to construct — and require even more taxpayer support, say industry executives. Countries such as China, Taiwan and South Korea have invested billions over decades to support their chip manufacturers.

"The European Chips Act is a great tool, because it puts us at the same level of incentives worldwide," says Jean-Marc Chery, chief executive of STMicroelectronics, a Geneva-based company which supplies chips for the automotive and industrial markets with mainly mature technologies. "But if we have to build [advanced technology] and huge fabs . . . then it's not very competitive."

European advantages

But Europe is not starting from scratch. The EU's hold on advanced chip equipment is one important advantage. The EUV machines from ASML enable the world's biggest chipmakers to challenge the limits of physics, packing more and more processing transistors on to smaller and smaller chips. Today the most cutting edge in mass production is 3nm — a reference to the size of each transistor on a chip — but technology is taking this to 2nm and below.

"Without EUVs, you would not be able to get to these large densities of transistors in a chip," says Thomas Stammler, Zeiss chief technology officer. "As we are the only one supplying EUV, we take this also as an obligation to expand and support the chip industry . . . and we are already working on the next generation of EUV."

Beyond ASML and Zeiss, in which ASML has a 25 per cent stake, Germany's Trumpf is a world leader in the lasers used by EUV machines. At 220,000C, the plasma created by Trumpf's lasers — used to generate EUV light — is almost 40 times hotter than the surface of the Sun.

Such advanced technology enables the EUVs to help companies such as Apple squeeze as many as 16bn transistors on the central processing unit of its MacBook today, compared with 1,000 transistors in the electronics devices in the 1970s.

Europe also has a strong advantage in its ability to produce the highly customised, complex materials and chemicals used in advanced chipmaking. These mainly come from a handful of European companies such as Merck, BASF and Solvay, and from Japanese firms, such as JSR and Shin-Etsu Chemical.

But there are still challenges. Other countries are investing far more than those in Europe to build up their own chipmaking capabilities, and ecosystems are already starting to develop around new plants.

In Europe, critical chemical and material suppliers have been slower to invest than those in the US and Taiwan. Some in the industry suggest this is because the European Chips Act does not sufficiently cover investment beyond chipmaking, or because European environmental regulations make expanding chemical facilities more difficult. And of course, Europe's gas crisis has driven up energy prices, forcing the bloc's energy-intensive chemicals industry to shut or suspend production of some products. Expanding in Europe right now is not attractive without strong incentives, say industry executives.

"Supply of chemicals to the new semiconductor fabs require investments in dedicated assets. Therefore, a lack of state support would definitely be a hurdle for suppliers of chemicals," Solvay Technology Solutions president Rodrigo Elizondo says. "In our view, the absence of a robust regional supply of chemicals will jeopardise the operations of European semiconductor fabs."

BASF and Solvay expect chemical and material shortages in the coming years when the new chip capacities ramp up, without new investment.

"Everyone talks about semiconductor manufacturing, but not enough attention is given to the chemicals needed to produce these microchips," says Lothar Laupichler, BASF's electronic materials senior vice-president. "It almost feels like chemicals are looked at like water or electricity, you open the faucet and it comes right out, but this is a misconception."

Kai Beckmann, member of the executive board of Merck and chief executive of its electronics division, adds: "We need to look into this jointly with the European Union, because we are talking about very highly specialised material that may not be well captured in the European ambitions."

Europe faces one even more basic problem: finding enough skilled workers. A survey by the European Labour Authority of the biggest labour shortages in the EU found that engineers and technicians — the pillars of the chip industry — were among the top four talent shortfalls in 10 countries.

AT&S chief Andreas Gerstenmayer says his company is struggling to find skilled workers for its new R&D centre

Companies such as Germany's Infineon, Edwards Vacuum in the UK, which is the crucial component and subsystem provider to ASML, and AT&S in Austria, one of the leading suppliers of the high-end chip substrates on which semiconductors are mounted, have all warned that foreign talent will be crucial to the further development and sustainability of Europe's semiconductor industry.

Andreas Gerstenmayer, AT&S chief executive, says his company is struggling to find skilled workers for its new research and development centre in Austria. "We have to reach out globally to hire talent, because the experience and the technology [of chip substrates] are not yet available here."

Martin Stöckl, Infineon's human resources boss, says the whole supply chain will be chasing the same talent, making matters worse. "The talent shortage issue is serious in Europe," he says. "If you do a quick calculation, we [Infineon] will build a new fab, STMicroelectronics and Intel are expanding too. We [companies] will need at least thousands more engineers and technicians in the coming years."

Yet despite all the challenges, industry executives are upbeat about Europe's prospects in this critical industry with companies such as ASML, Zeiss and Trumpf in operation. "Europe did retain real strength over the years in semiconductor manufacturing equipment," says a senior Intel executive. "That has really given it a chance to re-enter the market that otherwise it would not have had. Without those beachheads, it would have been very, very difficult for Europe to come back."

Additional reporting by Peggy Hollinger and Joe Miller

Graphics by Liz Faunce and Alan Smith

The FT View

FINANCIAL TIMES
'Without fear and without favour'

ft.com/opinion

A milestone for fusion power

More investment should be committed to translate the promise into a power station

Proponents of generating clean energy from nuclear fusion, the reaction that powers the Sun, have had to live for decades with the taunt that a commercial fusion plant always seems to lie 30 years in the future. But the chances that the timescale might become much shorter rose with the official announcement yesterday that, for the first time, the energy output from an experimental reactor had exceeded the input.

The "net energy gain" at the National Ignition Facility (NIF), part of the Lawrence Livermore National Laboratory in California, was a relatively modest 50 per cent, far below what would be needed for a commercial reactor. But it still marks a scientific milestone that should encourage more investment in fusion research and development from both private and public sectors.

This achievement follows an encouraging flow of technical and financial news over the past year or so. In February the Joint European Torus in the UK recorded a world record energy output, albeit less than the power required for the reaction. Funding for the growing band of fusion companies, while still far below the level for counterparts in other energy sectors, has doubled over the past year to reach a total of $5bn.

The challenge will be to balance excitement about a symbolically important moment with realism about the huge technical and engineering challenges required to translate its promise into a power station. Some initial reactions to the NIF news have come perilously close to hype, with phrases such as "huge breakthrough" and "holy grail", which risk subsequent disenchantment.

There is even uncertainty about the best overall approach to a fusion reaction. In the "inertial confinement" process used by NIF, 192 laser beams focus simultaneously on a fuel capsule about the size of a peppercorn that contains two isotopes of hydrogen: deuterium and tritium. The resulting implosion fuses the atoms together into helium while releasing vast amounts of energy.

Although there are other inertial confinement projects — for example First Light, a UK company that fires projectiles at the fuel pellet — most fusion labs favour the alternative "magnetic confinement" approach that holds superheated deuterium-tritium fuel in a doughnut-shaped reactor with powerful magnets. The biggest by far is ITER, a $23bn international experiment under construction in France.

For either approach to lead to a cost-effective power station, almost every aspect of today's experimental reactors needs transforming. The US Department of Energy designed the $3.5bn NIF to simulate nuclear explosions for weapons testing, so a lot of work will be needed to adapt the procedures for civil power generation. And though NIF has passed the "net energy gain" threshold, meaning output was higher than the direct laser input, it is still much lower than the overall energy required from the grid to operate the experiment.

> The tens of billions of dollars spent over decades are substantial when viewed in isolation. They are tiny, though, compared with other forms of energy

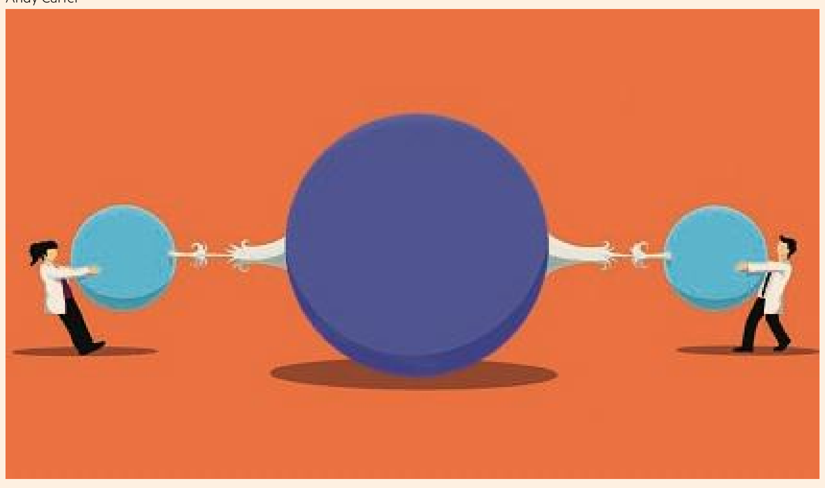
The tens of billions of dollars spent over several decades in fusion research and development are substantial when viewed in isolation. They are tiny, though, compared not only with other forms of energy — from renewables to fossil fuels — but also with the huge potential rewards from having a new power source that is almost carbon-free in its operations and does not depend on limited raw materials or the vagaries of wind and sunshine.

Ramping up fusion R&D should not distract from the need to improve the proven nuclear fission technology that powers existing power stations, particularly by introducing a new generation of small modular reactors. But the cost-benefit analysis would favour more investment in fusion even if it had just a 50 per cent chance of coming to fruition.

Opinion Science

Seawater electrolysis sparks hope for green hydrogen

Andy Carter



Anjana Ahuja

Hydrogen has long been viewed as a miracle fuel of the future. It does not appear on its own in nature but is partnered with other elements in compounds such as water and methane. The flammable element, which produces water when burnt, is touted as a potential clean energy source for heating, industrial and agricultural use, and long-distance transport where electrification is difficult.

One way of harvesting it is via electrolysis, which uses electricity to split water into its constituent elements, hydrogen and oxygen. Now researchers in China claim to have produced hydrogen by splitting seawater without the need to desalinate or purify it first, according to a report in Chemistry World.

Since seawater accounts for more than 96 per cent of the world's water, this could be a significant step on the path to making green hydrogen (that produced using renewable energy) affordably. "What they've done is really quite challenging from a chemistry perspective," explains Professor Alex Cowan, researches sustainable fuels at Liverpool University in the UK, and who last year co-authored a cost-benefit analysis on direct seawater electrolysis. "This technology hits a potential niche market that hasn't been addressed before."

> Researchers in China claim to have produced it without the need for desalination

Splitting water using electrolysis is relatively straightforward, and is already done in some hydrogen-generating facilities with access to a conventional water supply. The process, which takes place in an electrolyser, electrically separates hydrogen from oxygen and allows the hydrogen to be siphoned off. But with seawater this is more complicated because salt and other impurities can effectively destroy the electrolyser.

One option is to desalinate and purify seawater before processing it — but in some settings that can add cost. Another option is to treat the electrolyser components chemically to avoid corrosion, but that is viewed as impractical.

Now Heping Xie at Shenzhen University and Zongping Shao at Nanjing Tech University have come up with a workaround. They kept the electrolyser separate from the seawater with a waterproof, breathable membrane. A bit like a sieve, the membrane keeps anything other than pure water vapour from entering the electrolyser. As the water vapour is drawn in and converted to hydrogen, more is pulled in from the seawater to take its place. It is, they reported recently in the journal Nature, a self-sustaining system.

The scientists installed a prototype in China's Shenzhen Bay, and produced more than 1mn litres of hydrogen over 133 days without any reported deterioration. "Running it for more than 3,000 hours sets a new benchmark in stability," Cowan says.

One potential application could be for offshore wind to power seawater electrolysers, with the resulting hydrogen being transported back to land. A similar idea lies behind the Gigastack project in the Humber estuary, off the northern English coast: offshore wind is being used to power electrolysers, with the hydrogen being used at the Humber refinery.

Hydrogen, which accounts for about 2 per cent of the global energy market, is undergoing something of a renaissance, having been subjected to the same cycle of hope and hype that has characterised research into nuclear fusion. That latter technology is progressing at speed, emphasised by yesterday's announcement from the Lawrence Livermore National Laboratory confirming a milestone in energy output.

Unlike fusion, however, commercial hydrogen production already exists, mostly using fossil fuels, such as extraction from methane. The big challenges lie in scaling up, cutting cost and lowering the carbon footprint. Current electrolysers, for example, work at the megawatt, rather than gigawatt, level. The UK's hydrogen strategy seeks to double the target for low-carbon hydrogen output to 10GW by 2030, as an intermediate step to net zero. The bid to green the hydrogen industry is leading to strategic bets elsewhere. The Hydrogen Shot initiative was launched in the US last year to bring down the cost of green hydrogen to $1 per kilogramme in a decade. The EU, as part of its hydrogen strategy, has a 10-year plan to build hydrogen infrastructure, including transport networks and fuelling station. The bloc also hopes green hydrogen can replace natural gas in polluting industries like steel production.

Most important, perhaps, the cost of renewable energy needed to produce green hydrogen is falling. It may take another decade to separate the hope from the hype but, for now, the flame for a cleaner, hydrogen-fuelled future has a healthy glow.

The writer is a science commentator

Letters

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Seeds of Putin's resentment lie in shock therapy of the IMF

Jeffrey Sachs's letter "A misreading of the true choices facing Ukraine" (December 9) in turn misreads Martin Wolf (Opinion, December 7). Wolf nowhere specifies any "maximalist" victory of regaining Crimea. Neither does he decry a negotiated settlement as Sachs implies. Wolf's concern is that world powers should continue backing Ukraine, a view which likely has majority support.

Sachs's dire predictions of the outcome of a "maximalist" Ukrainian victory are in any case imaginary. Sachs is sympathetic to Russia's position on Nato, Crimea, Donbas and Viktor Yanukovych. But Nato expansion is a "pull", not a "push" process. In 1990, when eastern Europe was freed from communist Soviet domination, newly independent countries like Poland understandably sought Nato protection against any repeat of Budapest 1956, Prague 1968, etc. Equally, Sweden and Finland's applications are a response to a clear Russian threat, not the other way round. It was the Ukrainian people who overthrew Yanukovych in their understandable preference to join the free world rather than Vladimir Putin's totalitarian state. Their previous president Viktor Yushchenko had been poisoned by Putin's regime, as had Alexander Litvinenko, Alexei Navalny and the UK city of Salisbury.

Putin has initiated a war which has destroyed whole cities, killed 200,000 people, created millions of refugees, and now destroyed heat and power for winter months. This is all monstrous and deserves none of the understandings Sachs expresses. Putin lies, as Angela Merkel complained. He is a cynical master of the black arts, and totally unreliable. So where are Sachs's "plenty of reasonable grounds for ending the war quickly and peacefully through negotiation"?

If Sachs wants historical perspective, he should look back to 1990, when in discussions at which I was present as an objecting voice, IMF and World Bank teams, advised by Sachs, insisted on shock therapy to destroy Russia's planned economy overnight, causing gross domestic product to drop by 40 per cent, a huge reduction in male life expectancy, and a devastating economic humiliation of Russia. Herein lie the seeds of Putin's anti-western resentment.

Geoff Crocker
Bristol, UK

Industrial relations are a Tory political football

Your editorial ("Britain's new winter of discontent", FT View, December 10) warns that unions "must recognise that it is unrealistic to correct years of lagging pay in one go".

But that is not what is being asked. If the current pay demands were met in full, it would not overturn wage losses of up to 20 per cent due to Conservative cuts since 2010.

We are seeking to protect our members against further losses to their living standards. And we want government to commit to pay restoration over the following years.

While the timescale may be debated, the goal should be uncontentious for any government with a credible economic plan to lift living standards and so sustain demand.

You suggest that "as in some EU countries" the government should accelerate its bill "to negotiate minimum service levels". However, this government seeks to impose rather than negotiate.

And the comparison is misleading as those countries enjoy sectoral collective bargaining systems, with significantly stronger rights for working people and their unions.

By contrast, our Conservative government is keeping its doors closed to unions and seeking to impose further restrictions on the right to strike.

And as your article on the government's legislation reports ("Strike chaos: Walkouts escalate as another clampdown looms", Report, December 10) lawyers are warning that these restrictions could backfire and make disputes worse, not to mention breach our international commitments — including level playing field commitments enshrined in our trade agreement with the EU.

Meanwhile, working people and the public suffer while ministers frustrate negotiations and block deals in a puerile bid to turn industrial relations into a political football.

Frances O'Grady
General Secretary, Trades Union Congress
London WC1, UK

It's time City grandees addressed pay unfairness

In the past week, UK ministers have attacked public sectors workers for being "greedy" in seeking pay rises to cope with inflation, while removing the cap on bankers' bonuses ("Strike chaos: Walkouts escalate as another clampdown looms", Report, December 10).

Ministers have also threatened to tighten regulation on unions, while loosening regulation on the financial sector.

Do those in the City of London reflect on how the contrast in treatment of these two elements of the UK's economy and society looks to nurses, teachers, paramedics and others whom we clapped as essential workers during the pandemic?

Shouldn't some within the leadership of the City of London address in public the dangers to social cohesion of too large a gap between rewards and regulation in the financial sector and those in public services?

William Wallace
(Rt Hon Lord Wallace of Saltaire)
House of Lords, London SW1, UK

New York mayor's cure for the homeless is not legal

A recent piece by Gillian Tett ("New York is set for a perilously divided future", Opinion, December 4) suggested that large cities consider involuntary psychiatric hospitalisation as an approach to the problems associated with homelessness.

This is not a legally available option. The US Supreme Court ruled in 1975 in the case of O'Connor vs Donaldson that involuntary hospitalisation in the absence of immediate dangerousness to self or others is a violation of the 14th Amendment and the right to liberty.

In response to that decision, states rewrote their mental health codes and changed their operating practices of admitting thousands of people to custodial asylums where they would regress, deteriorate and never return to their families and communities. The large non-therapeutic state hospitals, each with thousands of patients, were closed. There is therefore a need for meaningful community-based models which address the complex issues of the homeless, including emotional illness, without removing them from their families and communities.

Dr Marvin J Schwarz
Attorney and Psychiatrist
Evanston, IL, US

What Socrates might have made of AI-generated text

Dave Lee ("Has relying on tech made us more stupid?", Magazine, November 26) asks whether data-driven technologies have in some way undermined our capacities for learning and, in particular, whether AI-generated writing can reflect knowledge.

Plato, through the voice of Socrates, considers the nature of writing in the dialogue called *Phaedrus*. He reports the claim made by the inventor of writing, a mythical Egyptian figure called Theuth, that it will make people "wiser and will improve their memories; for it is an elixir of memory and wisdom"; and the rejoinder from the inventor's patron that, on the contrary: "Their trust in writing, produced by external characters which are no part of themselves, will discourage the use of their own memory within them."

Socrates's conclusion is that the written word is just a reminder of what is known to the person who truly knows, not knowledge itself. This applies, to the max, to the AI-generated text described in the article. Whatever it reflects, it is not wisdom or knowledge on the part of the person who gives it voice.

Owen Kelly
Director of Engagement, University of Edinburgh Business School, UK

Crypto winter is coming, but here's some good news

The bankrupt billionaire and founder of FTX Sam Bankman-Fried is finally arrested (Report, FT.com, December 13). It reminds me of a Chinese idiom. When the lips are gone your teeth will be exposed to the winter chill.

FTX rival Changpeng Zhao of Binance — according to a recent Reuters report — is being investigated by the US Justice Department for possible money laundering. The boss of the biggest crypto exchange must be wondering if a truly decentralised exchange might serve crypto users better.

While bitcoin is struggling to recover to $17,000, Dogecoin may drop further to below $0.08. Elon Musk is rumoured to kick off a Twitter coin and the poor Dogecoin is increasingly like a Cinderella — bullied by a wicked stepmother. However, there is always a silver lining. Maybe it's good news for the $258bn Dogecoin class action.

How long will the crypto winter last? A long and cold winter is inevitable for bitcoin and Dogecoin holders. However, according to the Chinese belief in yin and yang, the winter solstice — which falls on December 22 — is the beginning of a slow turning point.

Khaw Wei Kang
Macau

Compulsory reading for those seeking to rejoin EU

Your article "Alarm rises in France over threat of power cuts" (Report, December 12) contains an interesting quote from one Bruno Cautrès of Sciences Po university. He asks: "If France has to cut its electricity from time to time, how can it claim to be the master of Europe?" The tone of the article is such that it is only the possibility of power cuts that is remarkable and not the French claim to be the masters of Europe, which is treated as a simple statement of fact.

This will not come as a surprise to any Briton who voted to leave the EU, but should be compulsory reading for those seeking a way back into the empire.

John Murray
Guildford, Surrey, UK

That reminds me, why hasn't my parcel arrived?

Thank you for featuring the letter from David McRedmond, chief executive of An Post, the Irish postal service (December 12).

The letter detailed why Britain's SMEs are losing customers in Ireland because the Royal Mail has refused to implement the necessary systems to comply with new EU customs rules. This results in An Post returning thousands of letters and post daily to the UK.

It was a timely reminder for me to follow up on two very important packages which have been outstanding for over two weeks! They were indeed returned to the UK. I will be buying in the EU going forward.

John O'Connor
Malahide, County Dublin, Ireland

Persian salt ditty speaks to KPMG exam conundrum

Your report "KPMG staff cheated in exams, says regulator" (December 8) reminded me of a beautiful Persian ditty. I cannot do justice to the little poem, but try to give its essence: "They apply salt to whatever can rot/Pity the times when salt itself would rot."

Kamal Golabi
Berkeley, CA, US

Corrections

- Immunocore presented early-stage data on a candidate for treating a range of cancers last September, rather than next September as incorrectly stated in an article on December 12.
- Silvergate launched the Silvergate Exchange Network, a platform that allowed crypto investors to transfer US dollars on to a crypto exchange, in 2017, not 2020 as wrongly stated in an article on December 10.

Opinion

Rarity of the German coup plot is a triumph of democracy

POLITICS
Janan Ganesh

Yes, he is called Heinrich XIII Prince Reuss. Yes, he wears a jaunty cravat. But don't infer from the alleged figurehead of the foiled German coup that it was a harmless and baroque caper. The federal republic tends not to send thousands of officers on more than 100 raids to arrest mere eccentrics. It tends not to involve Austrian and Italian authorities on a whim.

What we are allowed, if not a chuckle, is a question. It is not one I have seen asked since the news broke last Wednesday. Why are such reactionaries so rare? Why is the anti-republican Reichsbürger movement thought to number 21,000 (in Europe's biggest nation) and not something nearer a million? Think of the mental shift that Germans have had to make in a few generations: from violent dictatorship to near-pacifist democracy, from an electorate of white Christians to a multi-ethnic and multi-confessional one. Even with the best civic education, there "should" be more people who are irreconcilable to the change. There should be more in Italy, Spain, Japan and other nations that democratised at speed.

It is important to take note of what doesn't happen in life, not just what does. Almost all of the time, in almost all of the west, there is no active revolt against or even principled objection to democracy. Populism doesn't quite count. Its very name flatters democracy. Even when Donald Trump lies that his opponent stole votes, he isn't saying there shouldn't be votes. Genuine reaction, the belief that rule by the people is wrong, even profane, hardly exists.

This is a quiet miracle. Whatever its Athenian pedigree, democracy, if we date it from universal suffrage, is about a century old. That is a split second in historical time. To adopt it, most nations had to conquer or deny much deeper-rooted parts of their culture: church, army, nobility. Even the US only enfranchised all of its adult citizens as late as the 1960s. The whole democratic system should feel rickety, provisional and besieged.

> It is important to take note of what doesn't happen in life, not just what does

Instead, we have movements like Reichsbürger: sinister in intent, an understandable headache for the security services but also a rounding error of the national population in number. Almost no western political party of note makes the explicit case for pre-democratic values. When I once floated what the economist Garrett Jones calls "10 per cent less democracy", it was met with what I will call less than universal reader assent. Whether France should remain a republic was an open question (and one that was for long stretches answered in the negative) for a century after its revolution. There is nothing like the same sense of democracy being fundamentally contested in the west.

I sometimes wonder if liberals, in cursing the waves that have rocked the ship of state since around 2016, the year of Brexit and Trump, have missed the oceanic calm of the larger picture. The human brain is better at registering events (such as a coup plot) than non-events (such as the general absence of coup plots).

There is no way of making this case without incurring the accusation of complacency. Readers will refer me to surveys of the young that have uncovered alarming openness to non-democratic rule. But people say all sorts of things to pollsters: look at the professed scepticism of Covid-19 vaccines in France just two years ago. It would soon become a highly vaccinated country.

It is better to be too vigilant about the enemies of democracy, perhaps, than too relaxed. But not by a huge margin. Vigilance has costs of its own. For one, it can be self-fulfilling. In talking up the dark side of politics, well-meaning people might enhance its recruiting power. Crucial to the failure of anti-democrats has been the hunch among potential supporters that theirs is a hopeless cause. Some voters must go along with democracy less out of love than a belief that it is the only system in town. Be careful about granting to reaction the status of coming force.

Another cost of vigilance is hasty social reform, the better to "save" democracy. In the panic of 2016, people who didn't much like capitalism in the first place argued that it had to be tamed to avoid an all-out people's revolt. It was a shallowly materialist account of public anger: lots of prosperous people voted Brexit or Trump, not just laid-off auto workers. But it carried the day. You can draw a line from that discourse to the industrial protectionism of 2022.

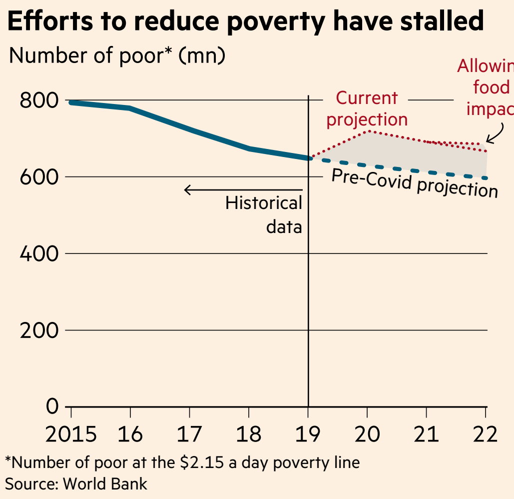
One day, someone will dramatise the German coup attempt in the style of *The Day of the Jackal*. No one will dramatise the general absence of such events. Of these two stories, the less filmable is the more profound.

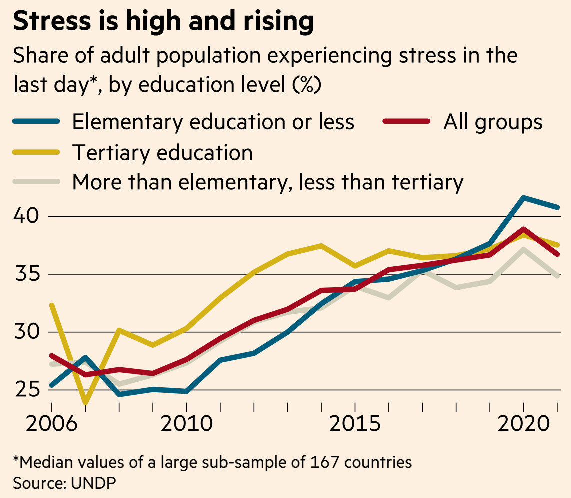
janan.ganesh@ft.com

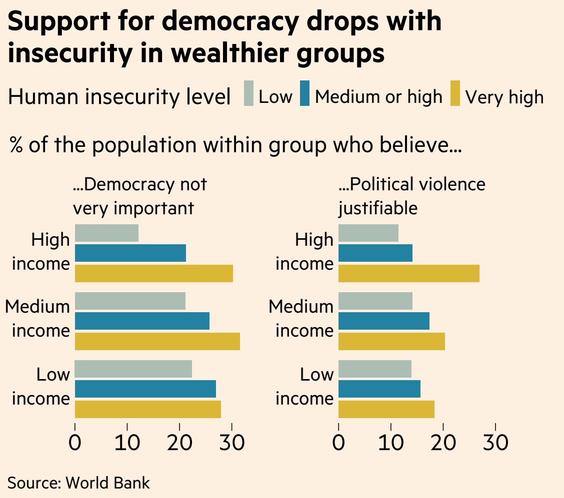
The optimists were right and can be so again

Martin Wolf Economics

Humankind cannot wait for another period of catastrophe before attempting renewal







Is our world getting better and likely to continue to do so or is it sitting on the edge of catastrophe? People who think about these questions tend to divide sharply into the cheerful optimists, who believe the former, and the gloomy pessimists, who insist on the latter. I am in the former camp. But I would also make an important caveat. Continuing progress depends on managing the dangers we ourselves have created. Among these are destruction of the planetary environment and thermonuclear war. To succeed we must overcome forces of division, within and among countries, that threaten social stability, global co-operation and peace. In sum, the world can be a better place. But we cannot take for granted that it will be.

An optimistic view of the past is contained in the Human Development Report 2021/2002 from the UN Development Programme and Poverty and Shared Prosperity 2022 from the World Bank. The latter shows, for example, that the proportion of the world's population living in extreme poverty (now measured at an income of less than $2.15 a day) fell from close to 60 per cent in 1950 to 8.4 per cent in 2019. That is staggering. Similarly, the UN's human development index — an amalgamation of national income per head, years of schooling and life expectancy at birth — also shows a substantial and steady rise from 1990 to 2019. Again, the World Happiness Report 2022 shows that the happiest countries are prosperous — and, interestingly, small — ones, with Finland and Denmark at the head of its list. Average prosperity may not be a sufficient condition for greater happiness. But prosperity helps. (See charts.)

Not surprisingly, the pandemic reversed progress. The number of people in extreme poverty jumped from 648mn in 2019 to 719mn in 2020. Worse, it may mean that the numbers in extreme poverty will be permanently higher than they would otherwise have been. Again, the human development index is estimated to have declined in both 2020 and 2021, erasing gains of the previous five years. The energy and food crises brought about by Russia's war in Ukraine will surely prolong the losses. The human consequences of these twin shocks then are unquestionably huge.

One might assume normal economic service will ultimately be resumed. Yet the Human Development Report suggests that this hope might not materialise. It points to today's "uncertainty complex", as crises pile up. Covid-19 is not, it suggests, a "long detour from normal; it is a window into a new reality".

Yet it is also true, as the report shows, that the response to Covid included the speedy discovery and development of effective vaccines. Thus, "in 2021 alone Covid-19 vaccination programmes averted nearly 20mn deaths". The distribution of these vaccines has been horribly unequal and the response has too often been one of ignorant hostility. But they worked. So, why be so pessimistic?

This "uncertainty complex" consists, suggests the report, of three elements: the planetary changes of the "Anthropocene" — the period of human-induced changes in the biosphere; profound social and technological changes; and political polarisation, within and between societies. The first is indeed novel. Both the second and third have been characteristic of our world since the 19th century. What is new today is how planetary forces interact with the domestic ones. We cannot now solve our domestic problems without solving our global ones. But we may also find it impossible to solve our global problems without first solving our domestic ones.

> We must overcome global and domestic forces that threaten social stability, co-operation and peace

The report gives fascinating evidence on three aspects of those domestic difficulties, rooted, it asserts, in uncertainty. First, there are rising levels of mental distress. Strikingly, data "paint a puzzling picture in which people's perceptions about their lives and their societies stand in stark contrast to historically high measures of aggregate wellbeing". Second, insecure people can be attracted to "social identities that become an 'antidote' to uncertainty, social identities that are in part affirmed as being different — at the limit completely opposite — from others". Finally, that process can lead to political polarisation and, to take a worrying example, rejection of democratic norms.

These domestic phenomena, worsened by inequality, interact with changes in global power and influence to destabilise international relations. Thus the interaction of domestic with global conflicts makes it even harder to sustain world peace and planetary stability.

This emphasis on the interaction between social, technological, economic and political developments may add a dimension to discussions of the "polycrisis". But it does not make meeting the challenges themselves easier.

The report itself suggests "three I's" — investment, insurance and innovation. All three make sense. If we are to improve the performance of our economies and meet the planetary challenges, we need to raise investment across the world, and not just in historically successful economies. Second, social insurance against uninsurable risks, such as the loss of a job, the decline in one's industry or failing health, will help reduce insecurity. Third, we need innovation. But the most important ones may now be social and political. The last period of such renewal was in the middle of the 20th century. We cannot wait for a second period of catastrophe before we attempt renewal once again.

We have made real progress, though it has been unequally spread within and across countries. But, as has always been true, progress creates new problems. We have also stumbled, often badly, on our road to the answers. If the optimistic view I still hold is to prove true, we have to stumble faster.

martin.wolf@ft.com

Europe may not find energy efficiency exciting — but it's crucial

Elisabetta Cornago

Given how much time EU leaders devote to discussing gas price caps, you would be forgiven for thinking that they are the solution to Europe's energy woes. Another favourite: fretting about industrial competitiveness — not only because high energy costs put Europe at a disadvantage, but also because the US is offering big subsidies to green technology sectors through the Inflation Reduction Act.

Europe's leaders are right to try to protect consumers and keep business costs down, and they should lean into energy efficiency to deliver on both fronts. It is the least sexy of green investments, with less visibility than wind farms or new battery factories, but it is the only way to durably curb Europe's reliance on fossil fuels.

The spike in energy prices is likely to linger for the next few years. Since attacking Ukraine in February, Russia has cut most pipeline gas supplies to Europe. Europe has responded by increasing imports of liquefied natural gas. But once Chinese economic activity picks up again, competition to attract LNG sources will be stronger, and refilling gas storage before next winter will be more difficult. Furthermore, additional investments to increase LNG supply will take time to reach the market. For these reasons, future gas prices in Europe will remain high all the way through to winter 2025-26. And Europe should under no circumstances go back to "business as usual" energy trade with Russia.

In search of a theoretically simple, politically appealing solution to high energy prices, some EU leaders have been trying to convince the European Commission to design a market "correction mechanism" to keep gas prices below a certain level. They are ignoring the fact that high gas prices indicate a real shortage of gas supplies. Effective as a price cap may sound, it would not increase gas flows to Europe — on the contrary, it might make sourcing and allocating gas more complex.

> Any investment that can reduce demand while keeping output up is a no-brainer

To become more energy secure, Europe needs to curb gas demand and find alternatives to Russian gas. Most attention since February has focused on supply, with governments striking deals with LNG-producing countries. But the crisis has also prompted cuts to the red tape that had been holding back the deployment of renewables. On the demand side, households have largely adjusted by turning down thermostats, and industry by replacing gas with coal and other energy sources and temporarily shutting down factories. But these behavioural and production changes are neither permanent nor costless, and price caps may discourage them.

Governments should be scaling up support for energy efficiency investments, ranging from retrofitting buildings to industrial decarbonisation. Any investment that can cut energy demand while keeping output up is a no-brainer. But most of the emergency fiscal measures in the past year have focused on subsidies, through regulated prices and income support to households, as opposed to investment incentives.

Most income support measures, such as transfers and tax cuts, have been untargeted, and richer people have had their energy consumption subsidised almost as much as the poor. By insulating consumers from price increases, governments have muted the signal that high prices provide for households to invest in heat pumps and businesses to seek more energy efficient technology.

Short-term, well-designed income support is necessary for lower-income households and SMEs, to avoid them falling into energy poverty and losing competitiveness. But if it is not backed up by investment support for energy efficiency, it risks becoming an open-ended black hole in public budgets.

When it comes to encouraging investment in renewable energy, simplifying permits goes a long way. In this respect, recent EU regulation has gone in the right direction. But on energy efficiency, progress is more sluggish. For example, in the past year France spent €38bn on measures for energy price mitigation, while it plans on devoting only €2.5bn to incentives for building retrofits in 2023.

Europe needs large-scale investment to retrofit the economy and green its energy supply. These investments are the only way the EU economy can remain competitive. Investment at the EU level financed by joint borrowing would be cheapest. The Recovery and Resilience Facility that the EU set up in response to the pandemic goes some way in this direction, but the urgency of shifting away from Russian fossil fuels calls for more. As commission president Ursula von der Leyen said recently, REPowerEU, the EU's plan to get off Russian gas, "needs greater firepower to accelerate the clean transition".

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FTX/SEC: slammed Bankman-Fried

Raising capital is the big challenge for most start-up hedge funds. Sam Bankman-Fried had an answer, according to civil charges made public yesterday by US regulators. These allege he knowingly siphoned as much as $8bn of account-holder funds for his trading outfit Alameda Research. Parallel criminal charges from the US Department of Justice include conspiracy to commit wire fraud.

Since the collapse of FTX, Bankman-Fried has maintained that he was merely guilty of sloppy record-keeping. He said he exercised little management control of Alameda. The complaint from the SEC paints a different picture: not of a mad scientist but of a calculating fraudster. The charges posit that "SBF" made victims of some 90 big investors including Sequoia, BlackRock and Thoma Bravo. They backed FTX with nearly $2bn of cash.

The charges should bring some comfort to those blue-chip funds. But the tension between fiduciary duties to limited partners and the fear of missing out will continue for capital allocators.

According to the SEC, improperly directing customer cash to his trading firm was not Bankman-Fried's only lapse. Rules governing collateral and margin calls were not applied to FTX customer accounts. At the same time, the entrepreneur effectively used customer cash for purposes of his own including property purchases and political donations.

Bankman-Fried will have his chance to respond to the SEC's allegations as well as those of the DoJ.

Authorities allege Bankman-Fried traded on his reputation as the one straight shooter in the crypto Wild West. That does not make the rest of the cast look good. Binance, which once flirted with rescuing FTX, is suspending withdrawals of the stablecoin, USDC. Crypto miner Argo Blockchain is the latest operator to approach a bankruptcy filing.

Studies have shown that early-stage VC firms are more than willing to tolerate a high volume of failed deals simply because the asymmetric returns of making a return of, say, 10 times, on a winner more amply covers losses. But wipeouts typically occur with little publicity and are not the consequence of alleged fraud. FTX is different because it has devalued a whole speculative sector. If gains on any stellar crypto start-up outweigh investors' losses on the flops, founders are keeping quieter than SBF ever did.

Checkout.com: stung, scorned and quartered

Checkout.com has always enjoyed doing things differently to other payments groups. In 2019, the fintech sealed its first fundraising with a handshake "between gentlemen". That style was more common among top-hatted Victorians than it is for start-up bros in Patagonia vests.

Both constituencies would be familiar with hyped-up companies that disappoint investors. Privately held Checkout.com has slashed its internal valuation to about $11bn. That would seem a sensible response to the Great Rotation to value stocks, as the company and its investors face the question of whether a notional worth of $40bn makes sense.

The figure reflects a $1bn cash raise in January and a tripling in value. The caveat is that private funding rounds often produce very unreliable total valuations. Sales of slim slivers of equity generate misleading capitalisations even in a liquid public market. Moreover, Checkout's most recent annual results for its UK entity showed an adjusted ebitda loss of $12mn in 2020. Listed rival Adyen has a market cap of €44.6bn, with ebitda of €630mn for 2021.

Inflation has crimped discretionary spending. Investors want to see a path to short-term profitability. Other highly valued private fintechs such as Klarna and Stripe have cut jobs. Shares in listed counterparts have tanked. PayPal is down 60 per cent in the past year. Affirm has suffered an almost 90 per cent fall over the same period.

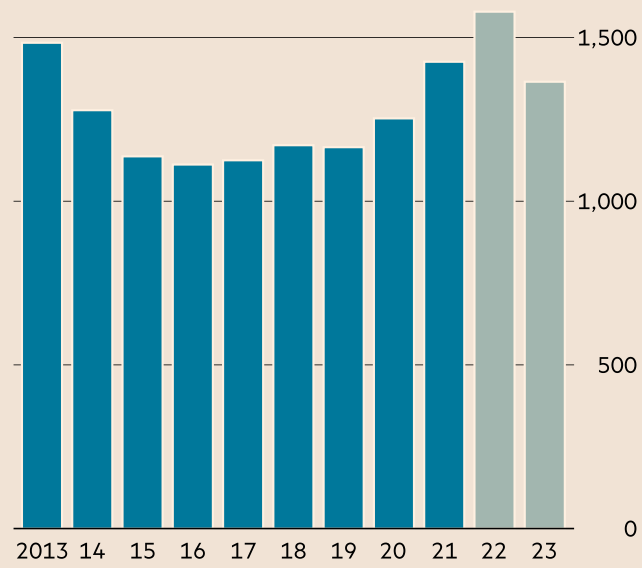
Checkout's woes include links to the crypto industry. FTX is a smouldering ruin. Binance is reportedly facing a Justice Department probe. Traders are running for the exits. Falling transaction volumes will hit revenues.

There are two lessons for fintech investors. The first is that it is foolish to assume that a surge in business during a pandemic will persist afterwards. The other is that private valuations are worth little more than the sums companies spend on press releases announcing them.

Gold Fields/mining M&A: nugget of hope

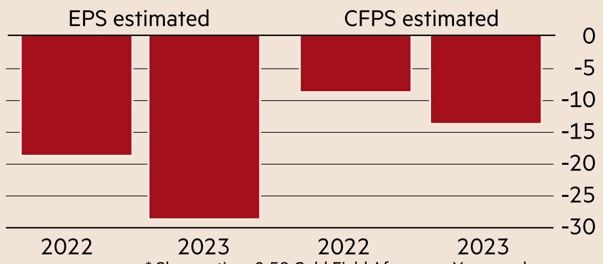
Gold mining costs have risen steadily for the past five years. For much of that time, the gold price has followed suit. Recently its value has fallen, but overheads kept climbing. Gold Fields' abortive bid for Yamana Gold would have cut costs but diluted returns.

Mining gold is more expensive than five years ago
All-in costs – gold miners ($ per troy ounce)



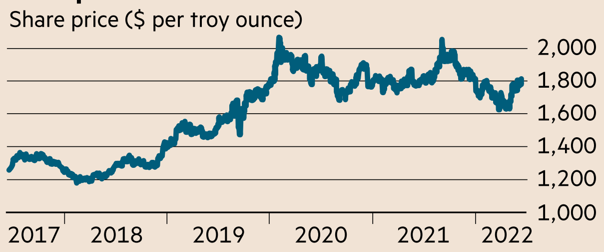
FT graphic Source: BMO Capital Markets

Yamana acquisition was earnings dilutive
At Gold Fields' final offer price* %



* Share ratio = 0.58 Gold Fields' for every Yamana share
Source: BMO Capital Markets

Gold price has rebounded
Share price ($ per troy ounce)



Source: Refinitiv

Gold Fields chair Yunus Suleman has deep regrets that the South African miner gave up its pursuit of Yamana Gold last month. Outgoing chief executive Chris Griffiths must feel even worse; the failed $5.3bn bid for the equity of the Canadian group cost him his job. Powerful investors saw the offer as ill-judged. Yesterday, Griffiths resigned.

He may not remain unemployed for long. Gold is well placed for a recovery. The pace of inflation is expected to moderate next year towards mid-single digits. When real bond yields drop, gold tends to rise. Experienced executives should be in demand.

Griffiths overestimated the risk appetite of shareholders. The all-stock deal would have diluted earnings per share by over a fifth this year and next, according to BMO Capital Markets. Shareholders thought this was a pricey means to offset Gold Field's faltering production growth from 2025.

Canadians Agnico Eagle and Pan American eventually won Yamana with a $4.8bn joint bid in cash and shares

Gold prices suggest that the bidding partners timed their swoop well. After peaking at just over $2,000 per ounce in early March, not long after Russia invaded Ukraine, the yellow metal sank about a quarter. That happened despite a lot of hand-wringing over inflation, especially in the US. Gold has a reputation for acting as a hedge for surging prices.

Not this time. The US Federal Reserve's hawkishness on rates deterred gold bugs.

But with costs including financing for mining it at around $1,600 this year, gold may be near a turning point. After totting up overheads, investments and even dividends, the average gold miner could need a price as high as $1,800 an ounce to cover all its needs, thinks Raj Ray at BMO. That is the current market price. A premium is needed to incentivise exploration.

One way gold companies could expand output cheaply is through takeovers more affordable than the deal Griffiths advocated. But ultimately the price of the metal itself will need to rise.

Diesel: no barrel of laughs

Savvy business owners are buying generators in case of blackouts. Extra cans of diesel to run them will be needed too. Prices for a fuel used in everything from trucking to tractors are near records. The EU ban on imports from Russia — the continent's largest supplier of middle distillate products — will add pressure.

The dearth is not limited to Europe. US diesel inventories are at historic lows and curbs on product exports are not being ruled out. Shutdowns mean capacity at US refineries is running at levels last seen in 2014.

Capacity in Europe has also fallen. Supply outages and strikes have reduced output at remaining refineries. When Russian imports cease in February, a hole of about a quarter will appear in European diesel imports.

Diesel spreads remain historically high at around $40 a barrel against crude. A disparity with low petrol spreads is a function of high gas prices. Cracking processes require hydrogen made from expensive natural gas. Changes in available crude types have also had an impact.

About 400,000 barrels per day of seaborne crude from Russia will need to be sourced from elsewhere. Europe is likely to plug that gap with higher imports from Asia and the Middle East. India has bought three times more Russian crude since February than it did last year. Exporters are making a lucrative trade. Refining margins in Asia peaked at $20 a barrel over the summer, thinks Janiv Shah of Rystad.

Shippers are benefiting. Russian producers of diesel and other products are seeking buyers a long way from Europe. Tonne-miles covered by "clean" tankers carrying products may grow 10 per cent as a result, thinks Morgan Stanley. Shipping rates near records coincide with limited numbers of new tankers coming into service.

Tight diesel supply will contribute to inflation. The rub for European consumers is that rules intended to keep out diesel made from Russian oil will result in their paying higher prices.

Coupa/Thoma Bravo: roaring forties

Chipmakers cite Moore's Law, that transistors on a microchip double every two years. Venture capitalists invoke a Rule of 40: a software group with a standalone future must have an annual revenue growth rate and an operating margin that together total more than 40 per cent.

US software company Coupa comfortably conformed to the Rule of 40 in 2019-22. But software bookings have collapsed in Europe and are flat in the US. Coupa announced yesterday that it would be taken over by tech private equity specialist Thoma Bravo.

An enterprise value of $8bn reflects the fall from grace of Coupa, whose software helps customers track spending. The valuation implied a 77 per cent premium above the stock's prior trading price. This represented a 75 per cent discount to Coupa's 2021 all-time high price.

Software valuations have collapsed in 2022 amid a softening economy and higher interest rates. But at least one large shareholder wanted Coupa to resist buyout overtures. It meant the group was reduced to lamenting how poor its prospects were after the Thoma Bravo bid became public. Coupa's aim was to persuade investors that capitulation was optimal.

The takeout multiple, including a premium, was just eight times forward revenues. Wall Street observers concur that the hyped valuations of 2021 may not return for years. Back then, software companies traded between 15 and 20 times annual revenues.

An FT study of IPOs completed between 2019 and 2021 shows that shares in the vast majority of companies are trading well below their listing price. Some have already opted to go private, including ForgeRock and Poshmark. Expect more tussles between boards and shareholders concerning when to sell out.

For sales to go through, investors would have to vote in favour. Boards will then be forcibly reminded of the Rule of 50: the percentage of investor support needed to clinch a deal.

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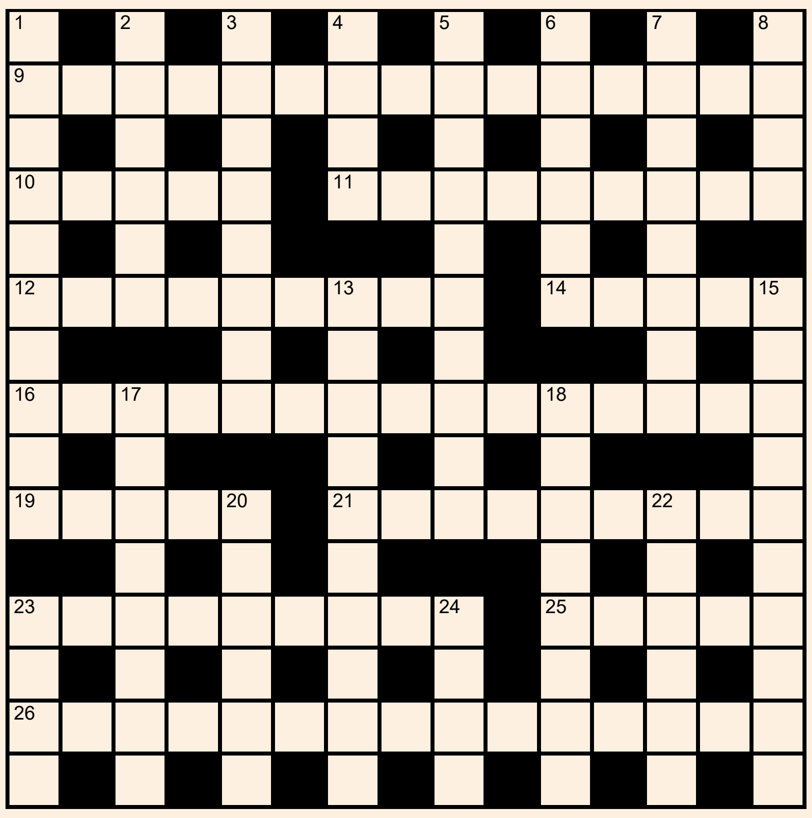
CROSSWORD

No 17,277 Set by FALCON



ACROSS

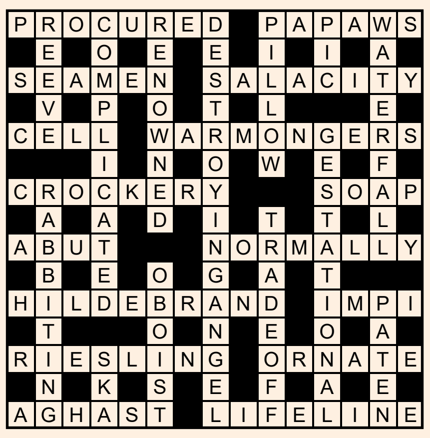
9 Police (CID) has one moving thing likely to become a problem (8,7)
10 Ship's course close to Dover (5)
11 Start to back small northern broker (2-7)
12 Sweetheart gets upset about ending in crime novel (4,5)
14 Nymph? No, a wizard, oddly (5)
16 Below, clue involving rugby player also inside (5,4,3,3)
19 Attractive daughter retiring around one (5)
21 Guide, Diane, in front of minister's house (9)
23 Lively exchange of opinions may make one irritable ahead of launch (9)
25 Time left in American city (5)
26 Teeth: sign in lady for treatment from me, perhaps (6,9)

DOWN

1 Incantation you heard in Bond film? (10)
2 Capital girl raised to support struggle (6)
3 Got it after bar reduced champagne (3,5)
4 Composer from northern part of Berlin (Germany's capital) (4)
5 What may be added to drink, drop of red in drinking mug or vessel? (10)
6 Cutting a new chequered cloth (6)
7 Fruit stack in Irish port (8)
8 Article put in study for college administrator (4)
13 Chat with female during landmark duel (5,5)
15 Opera company, from year dot, dotty about Lyceum? Not half! (5,5)
17 Ignore reduction (8)
18 Finer points of French resort site after redevelopment (8)
20 Betsey at last names corrupt Uriah Heep, for one (3-3)
22 Grease equipment in drilling installation (3,3)
23 Secret language, chapter and verse (4)
24 Advantage of golf club excluding women (4)

JOTTER PAD

Solution 17,276



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